

SONY.

COLOR VIDEO CAMERA

BVP-7P

BETACAM™

MAINTENANCE MANUAL

1st Edition (Revised 7)

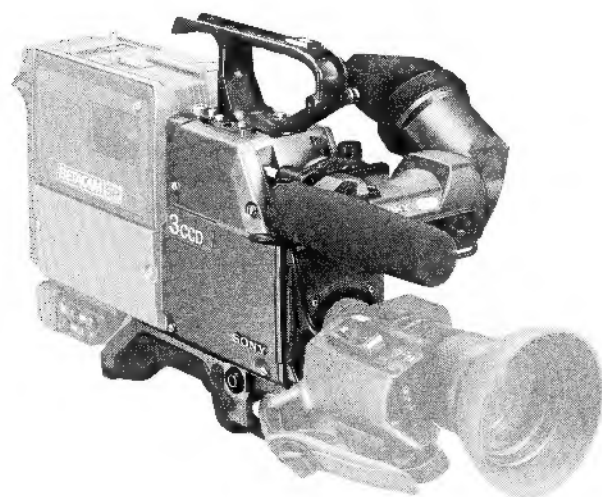
Serial No.40001 and Higher

EBU N-10 LEVEL

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SAFETY RELATED COMPONENT WARNING

Components identified by shading and  marked on the schematic diagrams and parts list are critical to safe operation. Replace these components with SONY parts whose part numbers appear as shown in this manual or in supplements published by SONY.

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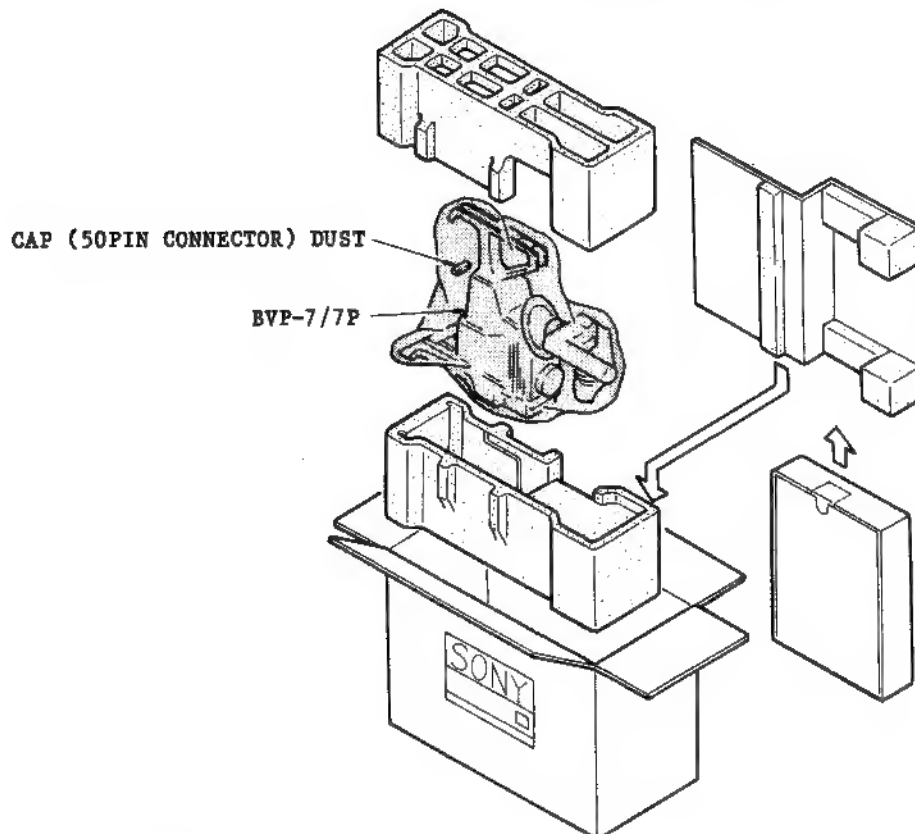
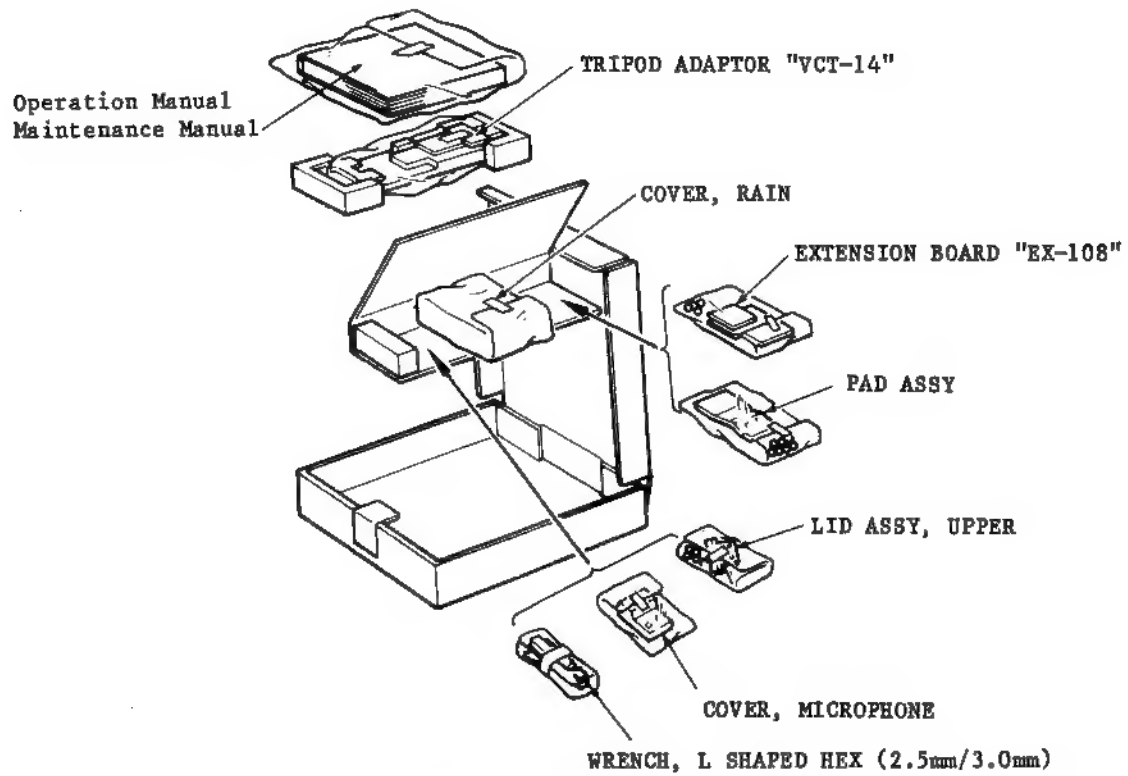
CCD Block	C-2
VA-77	C-7 (a)
IE-24/24P	C-15
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SECTION 1 INSTALLATION

1-1. UNPACKING AND REPACKING

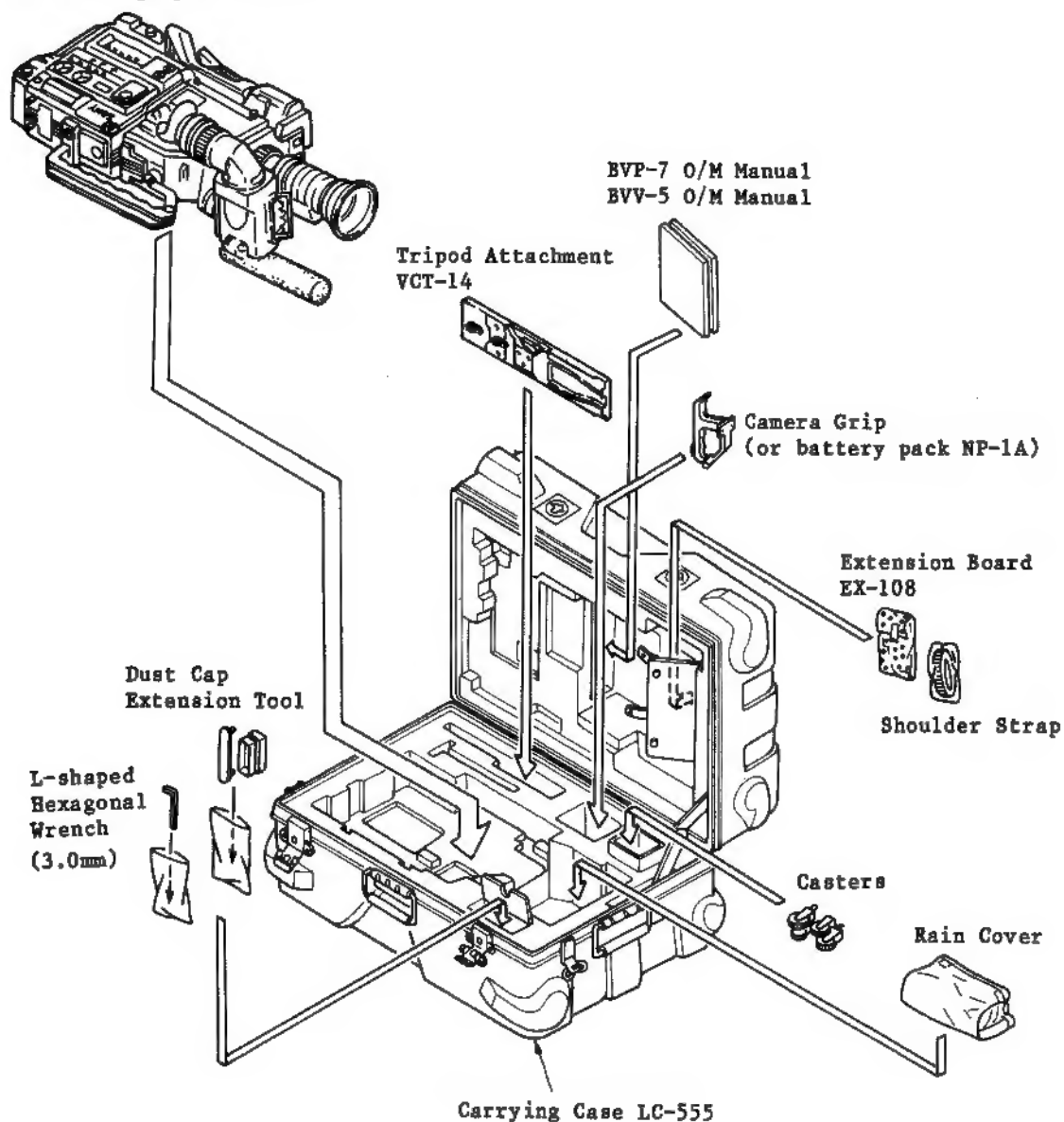


BVP-7 (UC) BVP-7000HS (UC)
BVP-7P (EK) BVP-7000HSP (EK)

1-2. REPACKING IN CARRYING CASE

The camera and VTR can be stored in the carrying case with the lens and viewfinder attached. This will protect the camera from the damage caused by outside pressure.

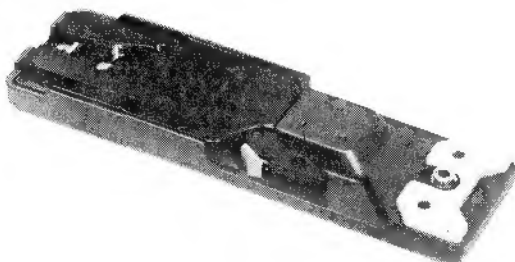
BVP-7
BVV-5
(with VTR grip attached)



1-3. SUPPLIED ACCESSORIES

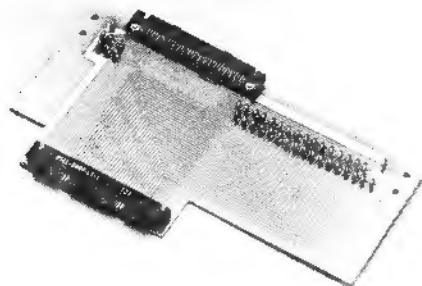
- . Tripod attachment "VCT-14": x 1

This is the fixed mount for the attached camera at the tripod.



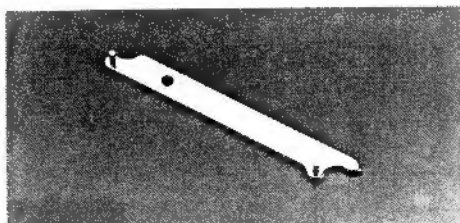
- . Extension Board "EX-108": x 1

Use this for the check and repair of the main printed boards. (IE-24 board, VA-77 board, PR-121 board, EN-69 board, and PS-173 board)



- . Extension tool: x 1

Use this when pulling out the printed board in the card rack.



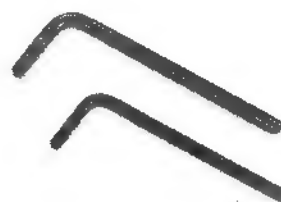
- . Dust Cap, 50-pin connector: x 1



- . Dust cover : x 1

- . L-shaped Hexagonal wrench (3mm): x 1
(2mm): x 1

Used for fixing or removing screws of the handle assy.



- . LID ASSY, Upper : x 1

- . Screw, Blind : x 2

After removing the handle assy of the camera, used for closing the hole on the upper cover.

- . Cover, Microphone: x 1

When the supplied microphone is detached from the viewfinder, attach this to protect the viewfinder from rain.



- . Operation Manual : x 1

Instruction manual for BVP-7/7P.

- . Maintenance Manual : x 1

Service Manual for BVP-7/7P.

1-4. CONNECTORS/CABLE

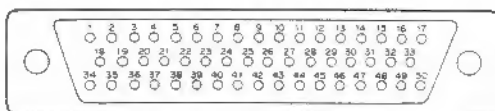
1-4-1. Connector Input/Output signals

The main connector input/output signals are as follows;

TEST OUT VS signal 1Vp-p

$Z_o = 75\Omega$

50-PIN CONNECTOR



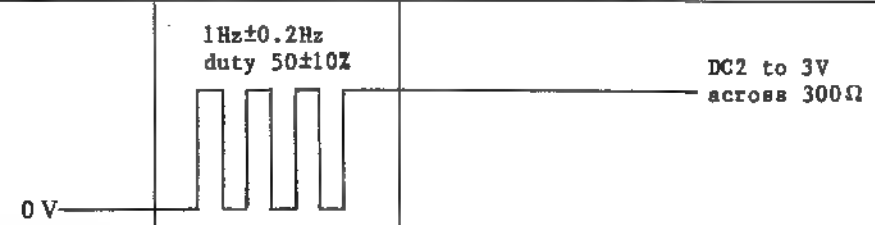
(EXT VIEW)

PIN No.	SIGNAL	REMARK FOR SIGNAL
1	GEN LOCK IN (X)	VBS 1 Vp-p, $Z_i = 1\text{ k}\Omega$
2	GEN LOCK IN (G)	
3	+8.8 V OUT	REG (+8.8 V)
4	-5.0 V OUT	REG (-5.0 V)
5	UNREG (GND)	GND for UNREG
6	UNREG (GND)	
7	R VIDEO OUT (X)	V 0.7 Vp-p, $Z_o = 75\Omega$
8	G VIDEO OUT (X)	
9	B VIDEO OUT (X)	
10	RGB VIDEO OUT (G)	GND for R, G, B VIDEO
11	(Spare)	
12	(Spare)	
13	(Spare)	
14	SD IN/OUT	Serial data for camera control
15	MIC OUT (G)	$Z_o \leq 600\Omega$, -60 dBm balanced
16	MIC OUT (X)	
17	MIC OUT (Y)	
18	RET VIDEO IN (X)	V 0.7 Vp-p, $Z_i = 1\text{ k}\Omega$
19	RET VIDEO IN (G)	
20	ZEBRA/AUDIO IN	AUDIO $Z_i \geq 1\text{ k}\Omega$
21	(Spare)	
22	TAPE IND 2 IN	ON: +4.5 V, OFF; GND or OPEN
23	TAPE IND 1 IN	

PIN No.	SIGNAL	REMARK FOR SIGNAL
24	REC ALARM IN	ON: +5 V, OFF: +2.5 V or 0 V, $Z_i \geq 20 \text{ k}\Omega$
25	BATT IND IN	Note 1), $Z_i = 300 \Omega$
26	PB REF IN	PB: +4.5 V, CAM: 0 V or OPEN
27	VTR START/STOP OUT	Note 2), $Z_o \leq 10 \text{ k}\Omega$
28	(Spare)	
29	R-Y VIDEO OUT (X)	V 0.525 Vp-p, $Z_o = 75 \Omega$
30	R-Y VIDEO OUT (G)	
31	AUDIO CONT OUT	0 V (0 dB) ~ 7 V (-20 dB)
32	VTR SAVE OUT	SAVE: +4.5 V, STAND BY: 0 V, $Z_o \leq 10 \text{ k}\Omega$
33	AUDIO MONITOR IN	No connection
34	SYNC (VTR) OUT	5 Vp-p, Negative pulse, $Z_o \leq 100 \Omega$
35	(Spare)	
36	SHUT CLOSE IN	No connection
37	CF OUT	Color Framing
38	RET VIDEO ENABLE OUT	ENABLE: 0 V, DISABLE: +5 V or OPEN
39	UNREG IN	+10.6 V ~ +17 V
40	UNREG IN	
41	Y VIDEO OUT (X)	VS 1.0 Vp-p, $Z_o = 75 \Omega$
42	Y VIDEO OUT (G)	
43	VBS OUT (X)	VBS 1.0 Vp-p, $Z_o = 75 \Omega$
44	VBS OUT (G)	
45	(Spare)	
46	(Spare)	
47	(Spare)	
48	(Spare)	
49	B-Y VIDEO OUT (X)	V 0.525 Vp-p, $Z_o = 75 \Omega$
50	B-Y VIDEO OUT (G)	

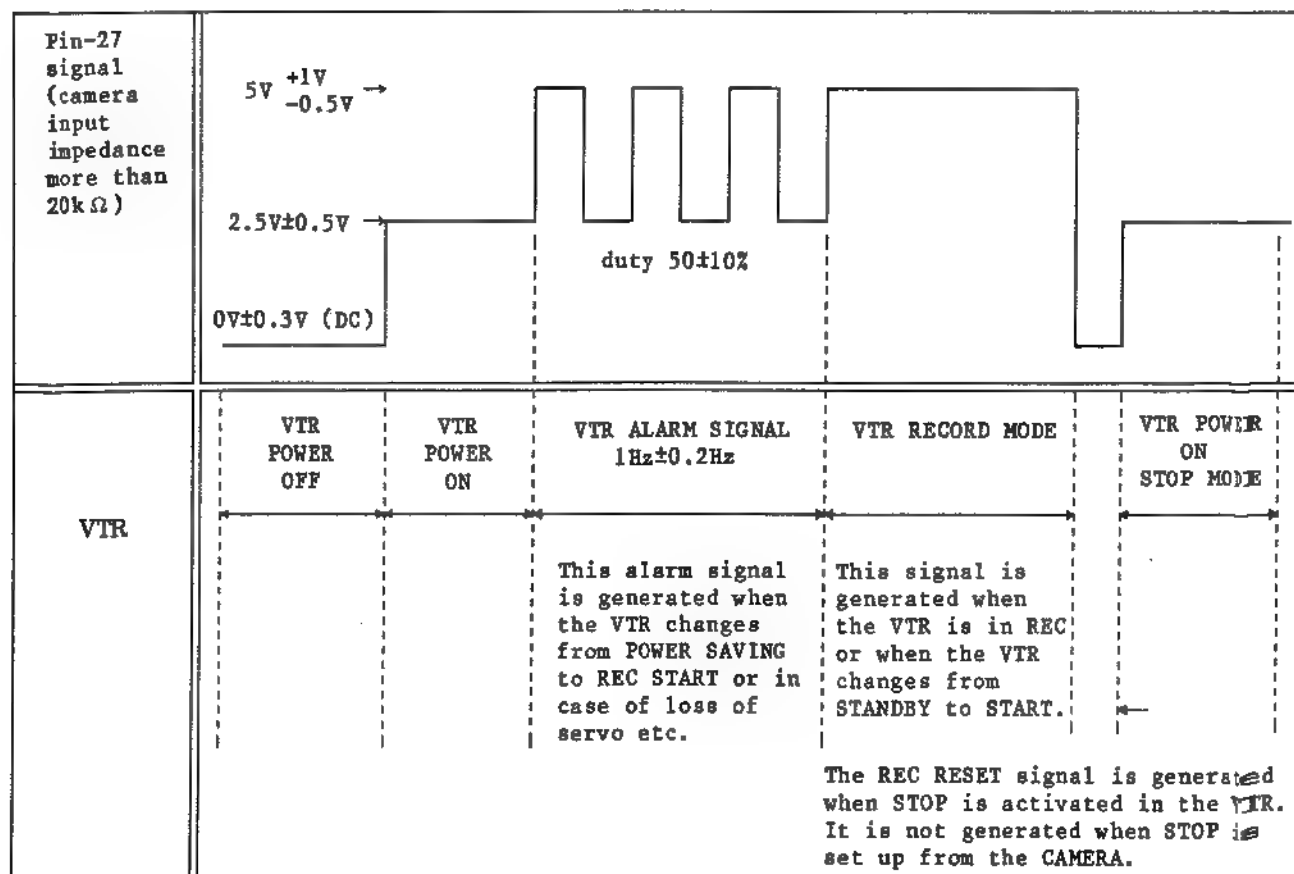
Note. 1 Signal at Pin 25

Battery voltage detection and warning signal generating circuits are located within the VTR. This signals are supplied from the VTR to the camera to either blink or light the LED at the bottom of the viewfinder.

BATTERY TERMINAL ADAPTOR (VTR INTERNAL BATTERY)	DC12V to 11.1V	DC11.1V to 10.8V	PIN 25 TURNS HIGH AT DC 10.8V. 10.6V DC or below the VTR Internal Power is cut off so that the Battery Power is sent to Pin 25.
PIN 25 OUTPUT FROM VTR			
LED IN VIEWFINDER	NEITHER BLINKS NOR LIGHTS	BLINKS AT 1Hz	LIGHTS

Note. 2 Signal at Pin 27

When the VTR is ON, the input to the camera at pin 27 is 2.5V DC. In VTR record mode the voltage is 5V DC. When servo is not applied or if alarm signals are generated within the VTR an alternating 1Hz signal (2.5Vp-p with 2.5V DC as reference) is sent to the camera. At the tape end when the VTR enters Stop mode or when setting up the Stop mode from the VTR. 0V DC is generated from 10msec to 100msec (called REC RESET). After REC RESET the signal level returns 60 2.5V DC.



VF (20P)



(EXT VIEW)

PIN No.	SIGNAL	REMARK FOR SIGNAL
1	FILTER 1 OUT	ON: +5 V, OFF: 0 V or OPEN
2	FILTER 2 OUT	
3	FILTER 3 OUT	
4	FILTER 4 OUT	
5	GAIN UP IND. OUT	ON: +5 V, OFF: 0 V or OPEN, +9 dB: $Z_o=7\text{ k}\Omega$ +18 dB: $Z_o=1\text{ k}\Omega$
6	CCIR/EIA OUT	CCIR: +8.8 V, EIA: 0 V, $Z_o=1\text{ k}\Omega$
7	AUTO IND. OUT	ON: +5 V, OFF: 0 V or OPEN, $Z_o=470\text{ k}\Omega$
8	TAPE IND. 1 OUT	ON: +4.5 V, OFF: 0 V or OPEN, $Z_o=330\text{ }\Omega$
9	TAPE IND. 2 OUT	
10	MIC IN (G)	GND for MIC
11	ZEBRA/AUDIO IN/OUT	ZEBRA ON: 0 V, OFF: +5 V or OPEN AUDIO: $Z_o\leq 30\text{ }\Omega$, -15 dBs $\pm 1\text{ dB}$
12	VF VIDEO OUT (X)	VBS 1 Vp-p, $Z_o\leq 100\text{ }\Omega$
13	AUDIO CONT IN	0 V (0 dB) ~ +7 V (-20 dB)
14	MIC IN (Y)	$Z_o\leq 600\text{ }\Omega$ -60 dBm balanced
15	MIC IN (X)	
16	BATT IND. OUT	ON: +4.5 V, OFF: 0 V or OPEN, $Z_o=330\text{ }\Omega$
17	REC/TALLY OUT	ON: +8.8 V, OFF: 0 V or OPEN
18	+9.3 V (VF) OUT	REG+9.3 V
19	GND	GND
20	UNREG OUT	+10.6 V ~ 17 V

LENS (12P)



(EXT VIEW)

PIN No.	SIGNAL	REMARK FOR SIGNAL
1	RET VIDEO ENABLE IN	ENABLE: 0 V, DISABLE: +5 V or OPEN
2	VTR START/STOP OUT	TRIGGER 5 Vp-p
3	GND	GND for UNREG
4	AUTO +5 V OUT	AUTO: +5 V, MANU: 0 V or OPEN
5	IRIS CONT OUT	+3.4 V (F16) ~ +6.2 V (F2.8)
6	UNREG OUT	+10.6 V ~ +17 V
7	IRIS POSITION IN	+3.4 V (F16) ~ +6.2 V (F2.8)
8	REMOTE/LOCAL OUT	0 V
9	EXTENDER ON/OFF IN	ON: 0 V, OFF: +5 V or OPEN
10	ZOOM POSITION IN	No connection
11	(Spare)	
12	(Spare)	

REMOTE (6P)



(EXT VIEW)

PIN No.	SIGNAL	REMARK FOR SIGNAL
1	(Spare)	
2	SERIAL DATA IN/OUT	Serial data for camera control
3	UNREG (GND)	GND for UNREG
4	(Spare)	VBS 1 Vp-p, Zo=1 kΩ
5	(Spare)	
6	UNREG OUT	+10.6 V ~ +17 V

1-4-2. Connector

When cables with connectors are set to the respective connectors on the connector panel during installation or service, the specified or equivalent connectors with cables, or the specified cable assemblies should be used, these are listed as follows;

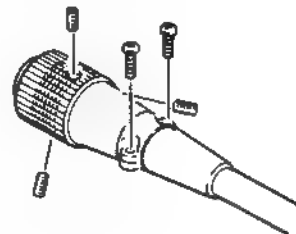
Connector function	Parts No., and name of connector with cable
TEST OUT (BNC)	1-560-069-11 PLUG, BNC or UGC-0.5 cable assembly (Cable length 1.5m, optional)
VF (20P, FEMALE)	1-558-609-11 PLUG, 20P, MALE
LENS (12P, FEMALE)	1-562-356-11 PLUG, 12P, MALE
REMOTE (6P, MALE)	1-557-406-11 REMOTE CONTROL CABLE (Cable length 10m)
50-PIN CONNECTOR (50P, MALE)	1-562-083-00 PLUG, 50P, FEMALE (Contained within CA-3A, CA-50 and BVV-5)

1-4-3. Removal of the CCZ, CCZQ connectors

CCZ, CCZQ Connectors (Removal of the connector)

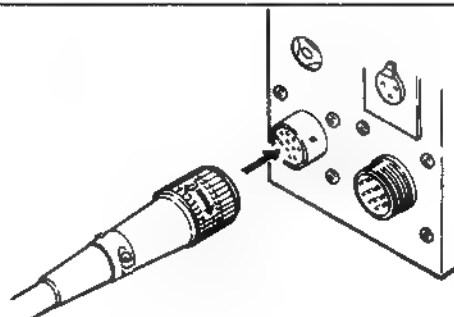
Step 1.

Remove the three hexagonal setscrews and the two setscrews.



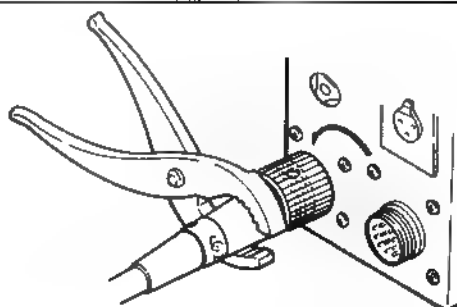
Step 2.

Fix the CCZ connector at the camera or VTR connector.



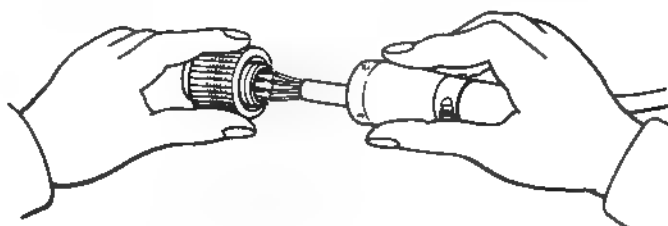
Step 3.

Rotate the CCZ connector counterclockwise by the plier and loosen it.



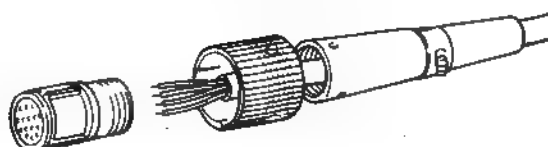
Step 4.

It can be removed by hand and unsolder.

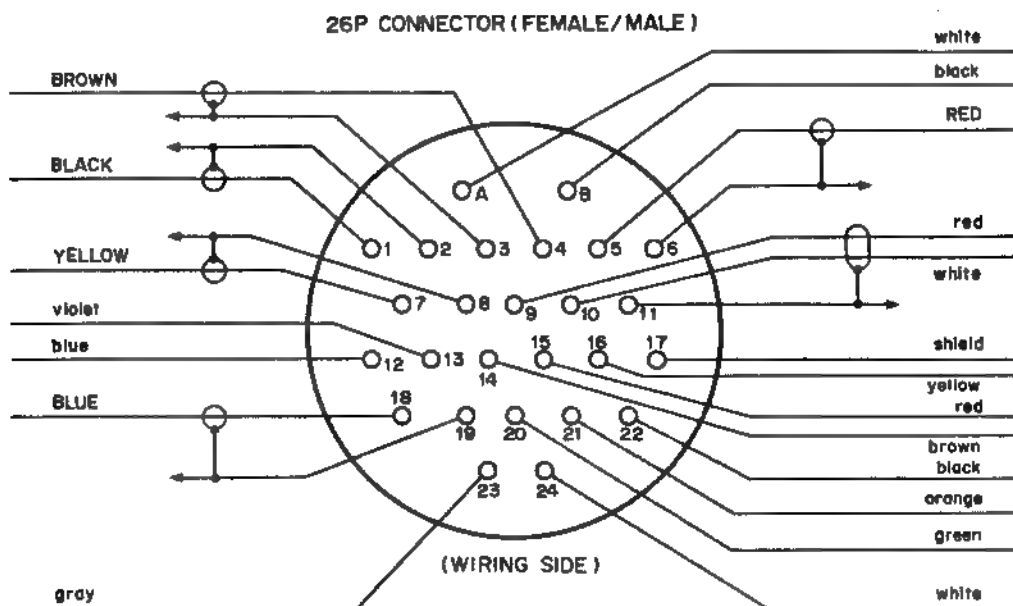


Step 5.

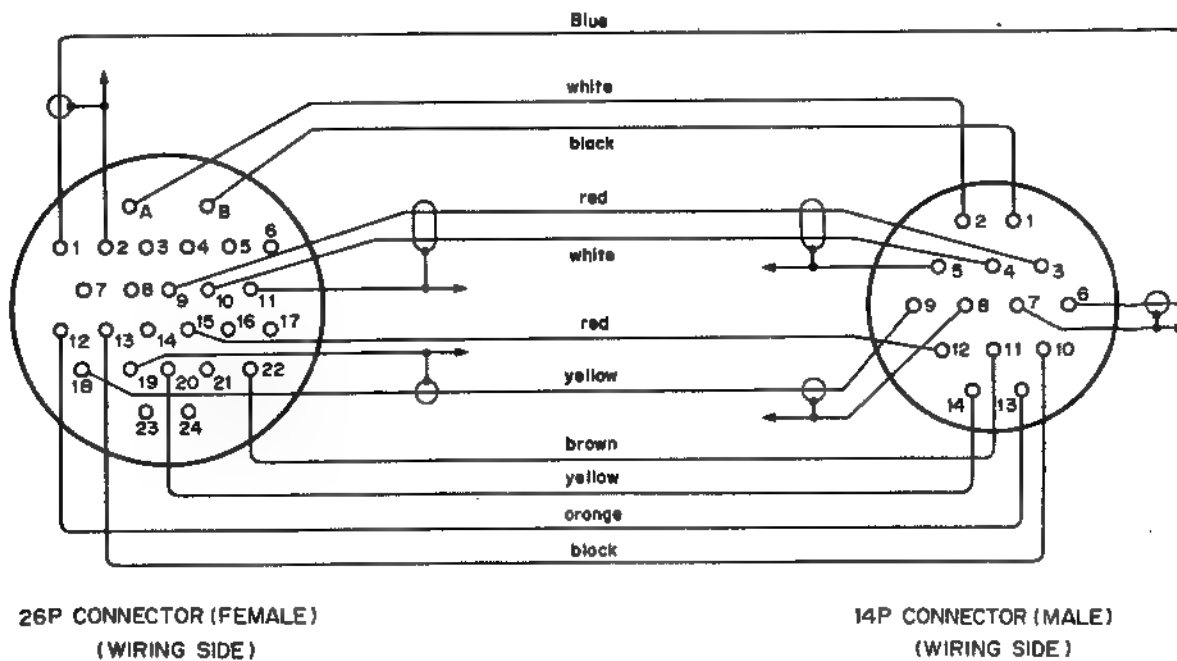
It can be broken up as shown in Figure.



CC2 cable (wiring diagram)



CC2Q cable (wiring diagram)



1-5. INSTALLATION CONDITIONS

Operating temperature 0°C to +45°C

Storage temperature -20°C to +60°C

Humidity Non condense

- . Avoid rough handling or mechanical shock to the camera.
- . Avoid placing subject to direct sunlight, excessive dust, mechanical vibration or shock.
- . Clean the viewfinder lens with a lens cleaner available at camera stores.
Do not use any type of solvent, such as alcohol, benzine or thinner.
- . After using the camera
Turn off the power of a equipment connected to the camera.

1-6. SET-UP

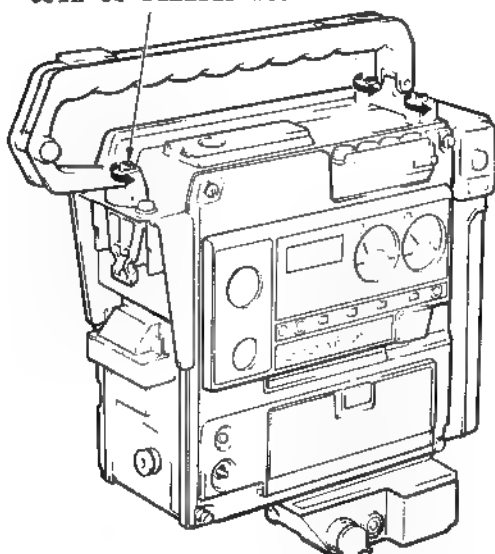
1-6-1. Set up with the BVV-1/1PS/1A/1APS/5/5PS VTR

(1) When the grip of BVP-7/7P is used;

Step 1. Remove the grip and shoulder pad of the VTR.

BVV-5/5PS

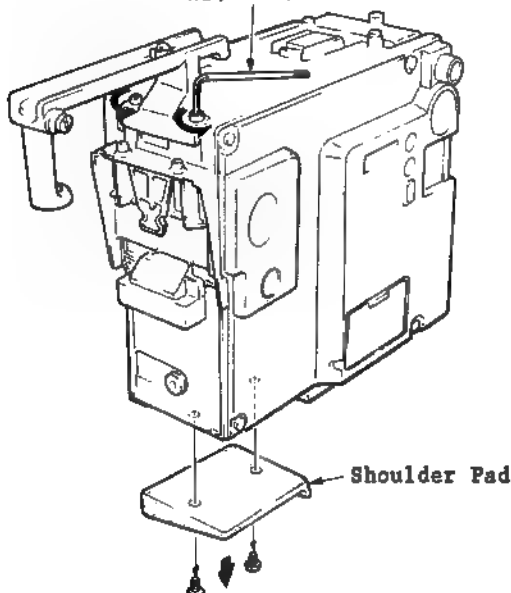
Coin or Similar Item



Note; After removing the grip, attach the cover (supplied) to the screw holes of the grip.

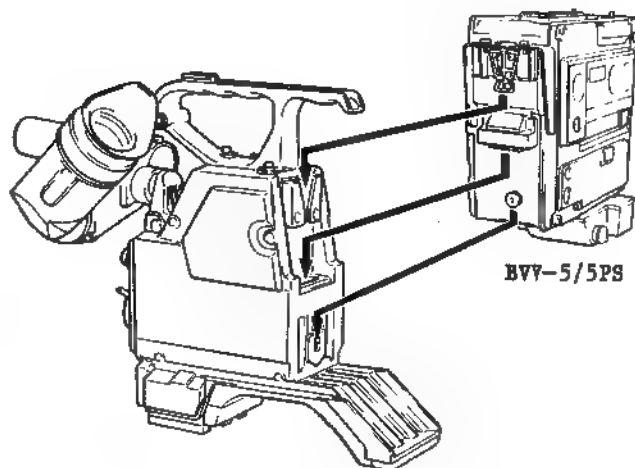
BVV-1A/1APS

L-shaped Hexagonal Wrench (2mm dia)

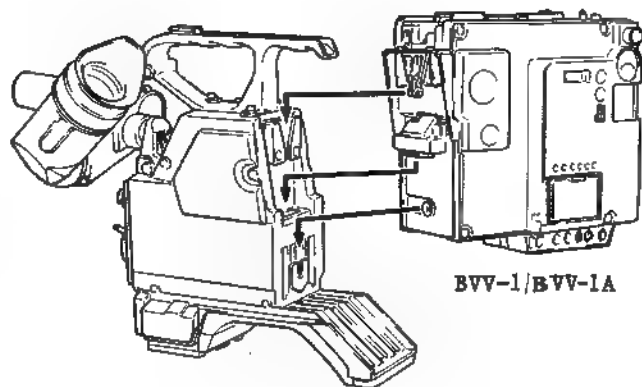


BVP-7 (UC) BVP-7000HS (UC)
BVP-7P (EK) BVP-7000HSP (EK)

Step 2. Attach the VTR to the camera.



BVV-5/5PS

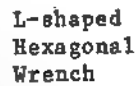


BVV-1/BVV-1A

Step 3. Tighten the screws (supplied with the VTR) securely.

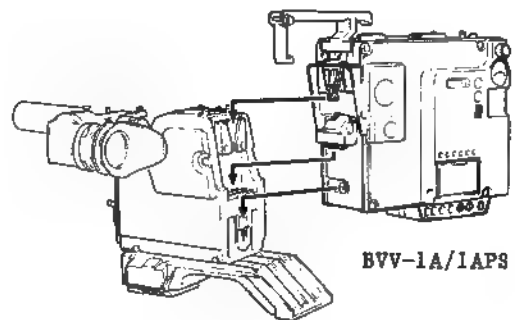
Step 4. Insert the 2 screws (M4) supplied with the VTR into the unoccupied screw holes for the VTR grip.

Step 1. Remove the grip of the camera.



This diagram shows an exploded view of a screw hole cover assembly. The main component is a rectangular base with a large circular opening on the left side. A smaller rectangular plate, labeled "Screw Hole Cover", is positioned above the base. Two screws are shown being inserted into the cover plate. A line points from the text "Screw Hole Cover" to the plate.

Diagram illustrating the location of the three locking screws on the back cover of the BVV-5/5P3 camera. The screws are indicated by arrows pointing to the top, middle, and bottom of the cover.



BVP-7 (UC) BVP-7000HS (UC)
BVP-7P (EK) BVP-7000HSP (EK)

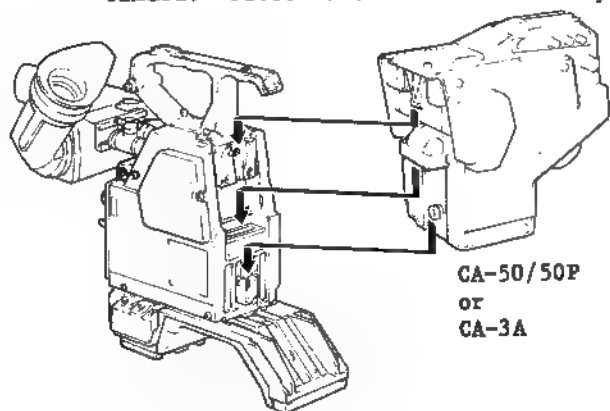
1-6-2. For System Use

Step 1. Attach the tripod attachment (VCT-14) to the tripod.

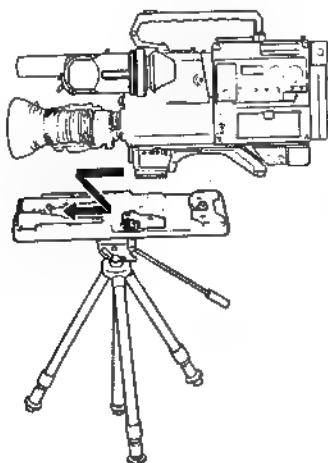
Fit the screw of the tripod into one of the screw holes on the bottom of the tripod attachment.



Step 2. Attach the CA-3A or CA-50/50P to the camera. Fasten the 4 screws securely.



Step 3. Attach the camera to the tripod attachment.
Slide the camera along the groove of the tripod attachment until it clicks.

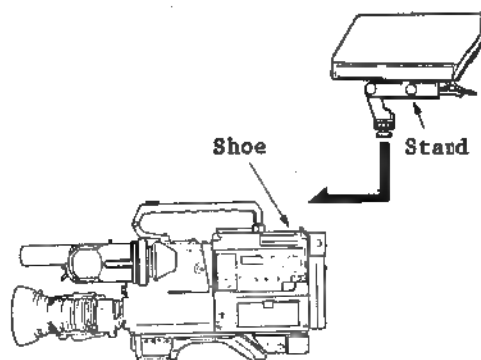


Step 4. Attach the viewfinder (BVF-50) to the shoe on the camera adaptor. (Refer to BVF-50 operation and maintenance manual.)

(1) Attach the viewfinder stand (supplied with BVF-50) to the viewfinder.

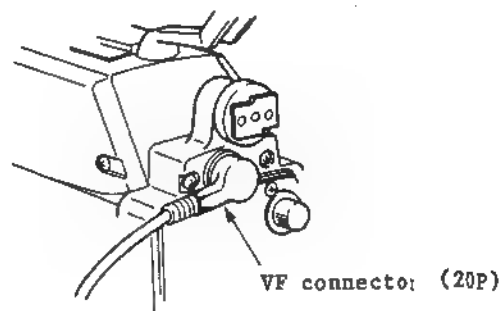
(2) Attach the viewfinder stand to the shoe on the camera adaptor. Slide the bottom plate of the stand to the shoe on the camera adaptor, and tighten the ring of the stand.

If you can not install the viewfinder because of the grip of camera, remove the grip.



(3) Remove the 1.5inch viewfinder (supplied with BVP-7/7P).

(4) Connect the BVF-50 to the VF connector on the camera with the 20P-12P connecting cable (supplied with the BVF-50).



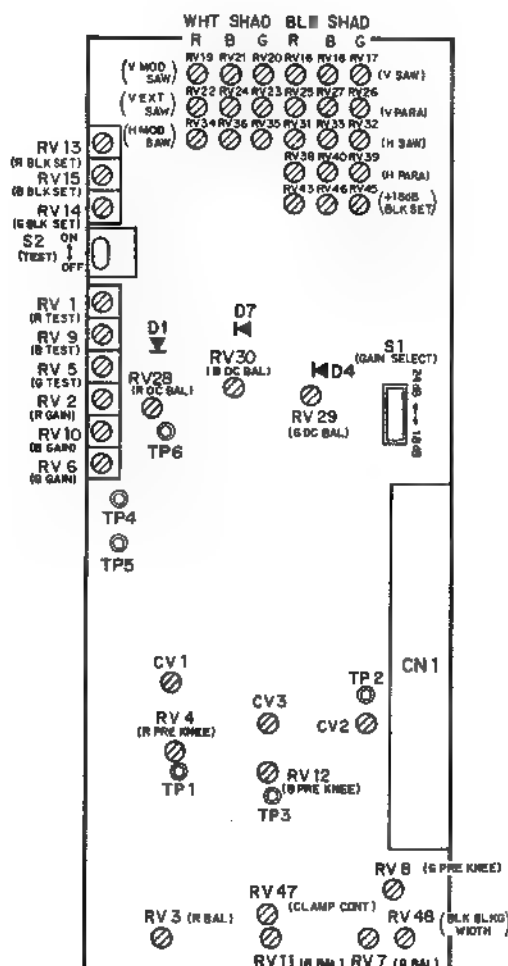
1-7. GAIN CHANGES

The gains of 0-9-18dB can be selected with the GAIN selector (side panel) at the factory. Therefore the gain can be set as follows.

- 0 - 9 - 18dB
- - 9 - 24dB

Changing from 18dB to 24dB

By setting the S1 (GAIN SELECT) switch on the VA-77 board to "24dB", the video output level can be raised by 24dB at the 18-position of GAIN selector (side panel). When the S1 switch is changed; 18dB → 24dB or 24dB → 18dB, be sure to perform the +18dB Black Set adjustment.



VA-77 BOARD (COMPONENT SIDE)

1-8. SWITCH, CONTROL SETTING

1-8-1. Daily Maintenance

VA-77

BLK SET (R, G, B) (RV13, 14, 15)
Adjust so that no pedestal level changes when the GAIN switch is set at +9dB or +18dB.

TEST ON/OFF (S2)
Used for checking the video level.
When turned on, the lens is automatically closed and the TEST SAW waveform is added to the video signal system. Normally set to "OFF".

TEST LVL R, G, B (RV1, 5, 9)
Used for checking the video level.
Adjust the level of TEST SAW waveform signal at 100IRE (700mV).

GAIN R, G, B (RV2, 6, 10)
Adjust their controls so that the video level of output at VA-77 board is 0.5Vp-p.

IE-24/24P

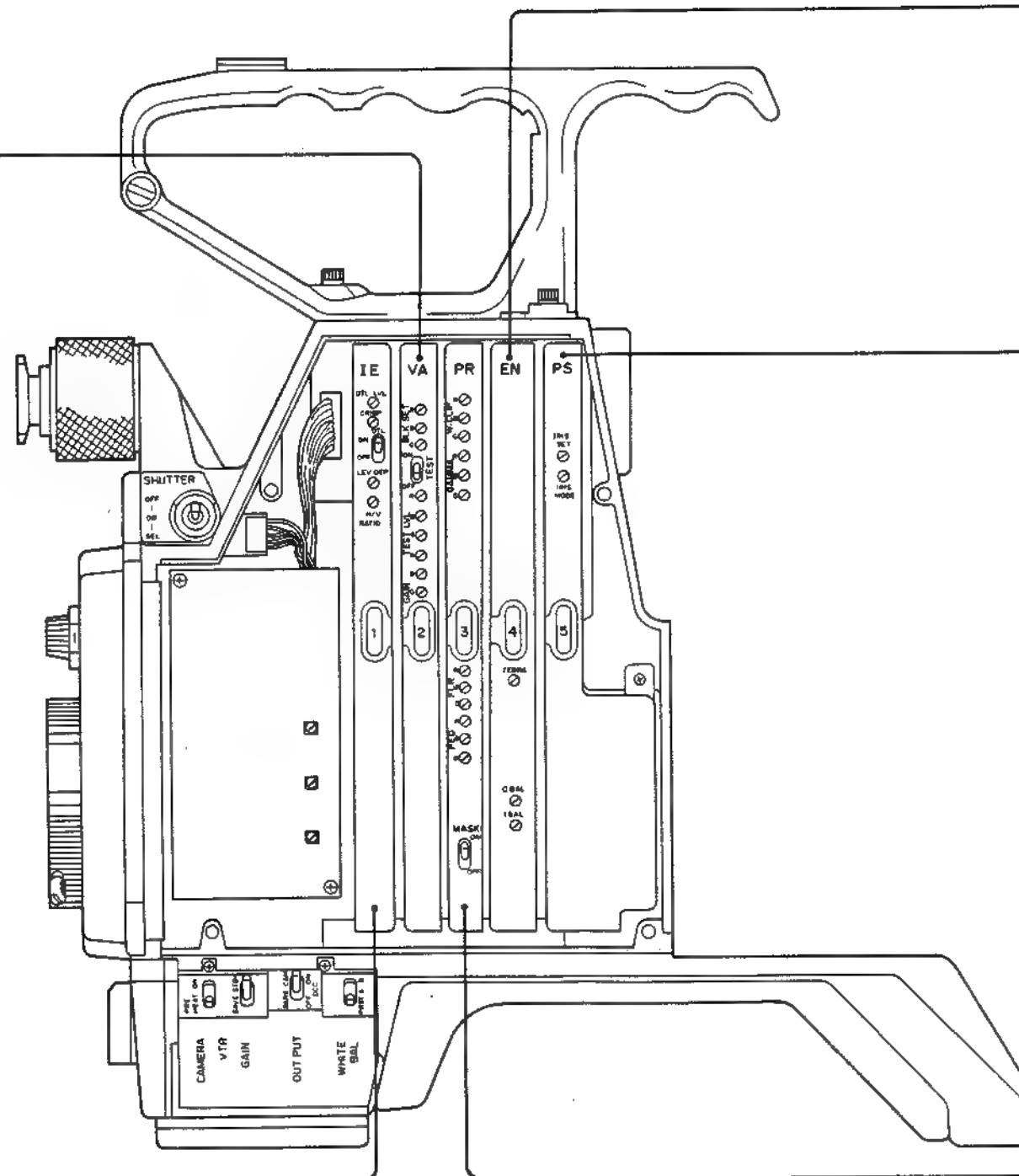
DTL ON/OFF (S1)
Turn on or off the detail signal.

DTL (RV5)
Adjust the detail amount.

H/V RATIO (RV7)
Adjust the balance of the horizontal and vertical of the detail signals.

LEVEL DEPEND (RV8)
Set this control so that the detail signal is not superimposed near the black level of a signal.

CRISPENING (RV4)
Set this control so that the detail signal is eliminated from near the black level of a signal.



EN-69/69A

ZEBRA (RV13)
Adjust RV13 so that the 70IRE (500mV) section is displayed on the viewfinder screen in a zebra pattern.

Q/U BAL (RV21)

I/V BAL (RV19)
Adjust two controls alternatively and observe the output video signal (composite video signal) corresponding to the black portion. The adjustment should be minimized the carrier leakage.

PS-173

IRIS SET (RV5)
IRIS MODE (RV4)
Adjust the detection method of the video level and the sensitivity for the signal when the lens iris is set to "Auto" mode. The peak level detection is selected when the IRIS MODE is at the fully counterclockwise position and the average level detection is selected at its fully clockwise position. Set the IRIS MODE to the mid position, shoot the gray scale chart and adjust the IRIS SET so that the white peak level is 100IRE (700mV).

PR-121/121P

GAMMA R, G, B (RV8, 17, 27)
When a 11-step grayscale chart is shot so that the white level is 100IRE (700mV), set the cross point of the waveform at 55IRE (385mV).

W. CLIP R, G, B (RV35, 36, 37)
When setting the GAIN switch at +18dB, adjust the white level.

PED R, G, B (RV2, 12, 20)
Close the lens iris, and set the pedestal level at 3IRE.

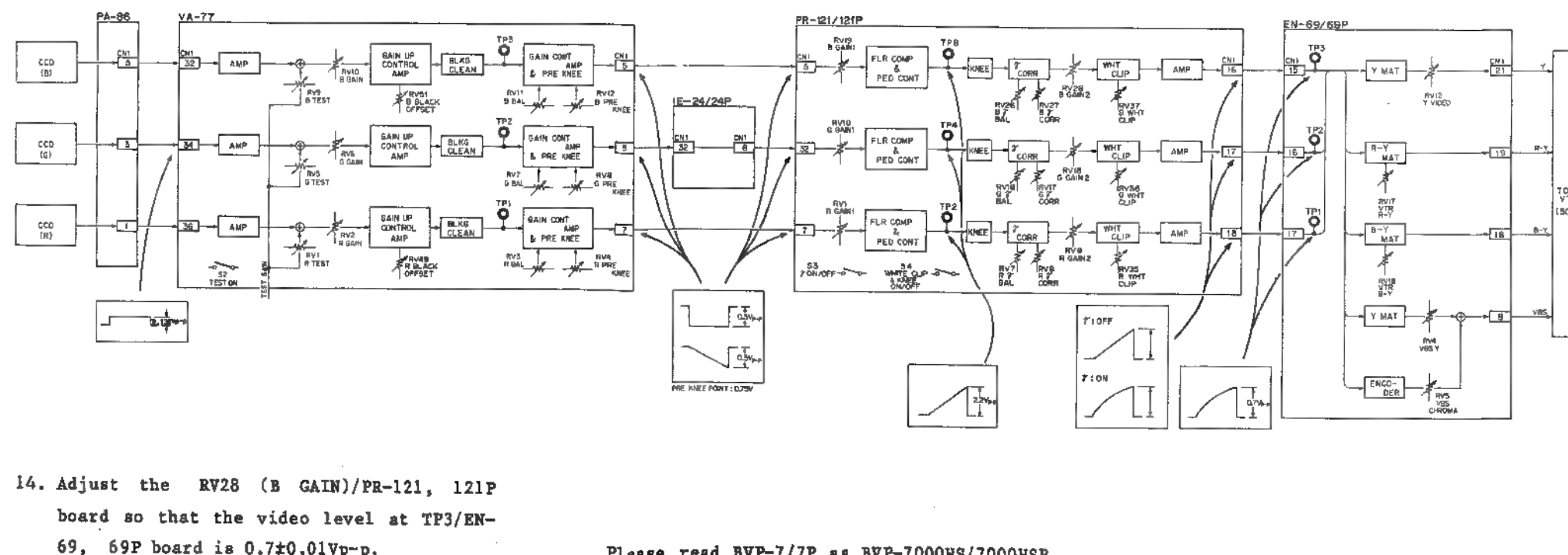
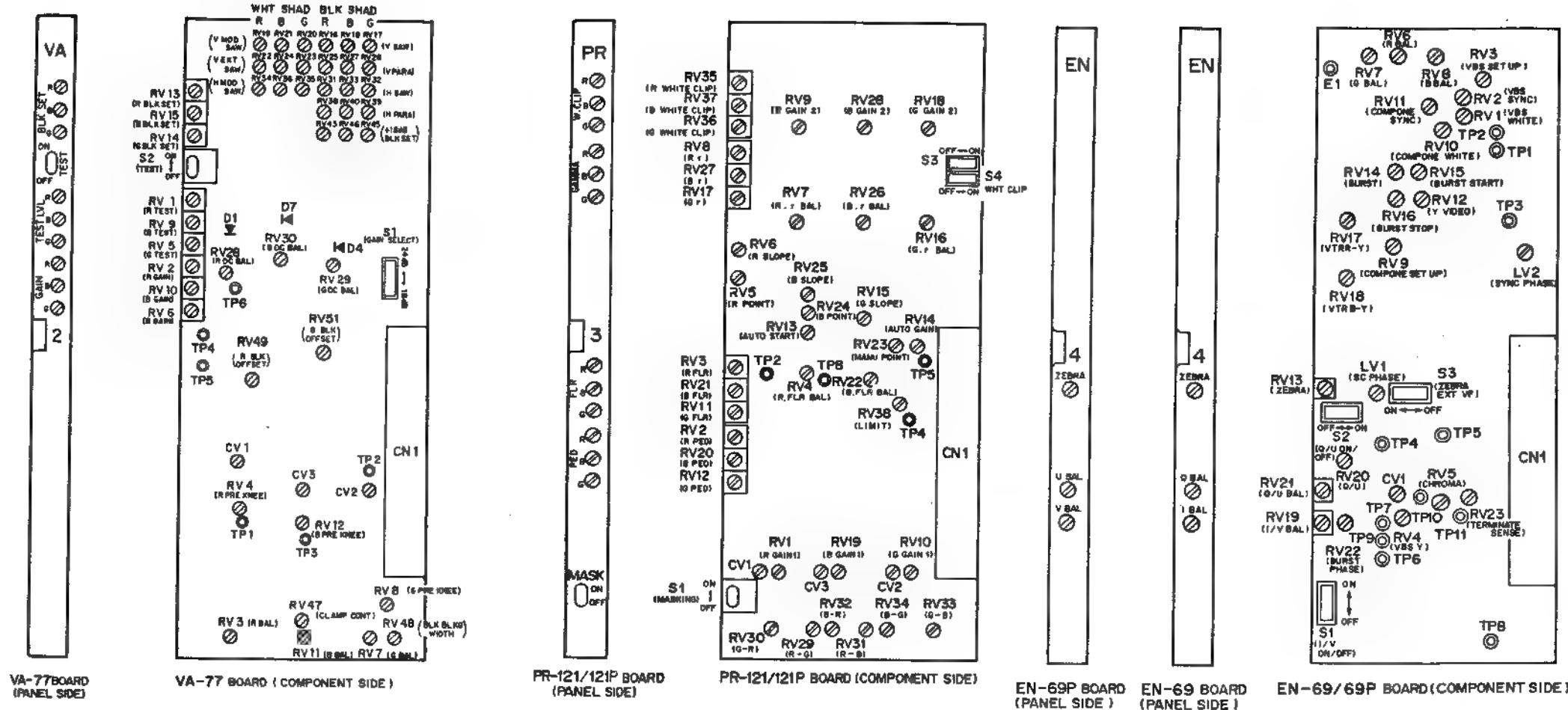
FLR R, G, B (RV3, 11, 21)
Compensate the dispersion of the video level due to the flare.

MASK ON/OFF (S1)
Change over the masking signal to ON or OFF. Normally set to ON.

LEVEL CHECK SHEET

Refer to the SECTION 4 ALIGNMENT for the following level check.

- Adjust the iris control so that the video level at CN1-34/VA-77 board is $0.130 \pm 0.01V_{p-p}$.
- Adjust the RV6 (G GAIN)/VA-77 board so that the video level at CN1-32/PR-121, 121P board is $0.5 \pm 0.01V_{p-p}$.
- Adjust the RV2 (R GAIN)/VA-77 board so that the video level at CN1-7/PR-121, 121P board is $0.5 \pm 0.01V_{p-p}$.
- Adjust the RV10 (B GAIN)/VA-77 board so that the video level at CN1-5/PR-121, 121P board is $0.5 \pm 0.01V_{p-p}$.
- Set the S1 (TEST ON/OFF) to "ON".
- Adjust the RV5 (G TEST)/VA-77 board so that the video level at CN1-32/PR-121, 121P board is $0.5 \pm 0.01V_{p-p}$.
- Adjust the RV1 (R TEST)/VA-77 board so that the video level at CN1-7/PR-121, 121P board is $0.5 \pm 0.01V_{p-p}$.
- Adjust the RV9 (B TEST)/VA-77 board so that the video level at CN1-5/PR-121, 121P board is $0.5 \pm 0.01V_{p-p}$.
- Adjust the RV16 (G Y BAL)/PR-121, 121P board for such a position that the white peak level at CN1-17/PR-121, 121P board does not change while setting S3 (Y ON/OFF)/PR-121, 121P board at ON or OFF.
- Adjust the RV7 (G Y BAL)/PR-121, 121P board for such a position that the white peak level at CN1-18/PR-121, 121P board does not change while setting S3 (Y ON/OFF)/PR-121, 121P board at ON or OFF.
- Adjust the RV26 (B Y BAL)/PR-121, 121P board for such a position that the white peak level at CN1-16/PR-121, 121P board does not change while setting S3 (Y ON/OFF)/PR-121, 121P board at ON or OFF.
- Adjust the RV18 (G GAIN)/PR-121, 121P board so that the video level at TP2/EN-69, 69P board is $0.7 \pm 0.01V_{p-p}$.
- Adjust the RV9 (R GAIN)/PR-121, 121P board so that the video level at TP1/EN-69, 69P board is $0.7 \pm 0.01V_{p-p}$.



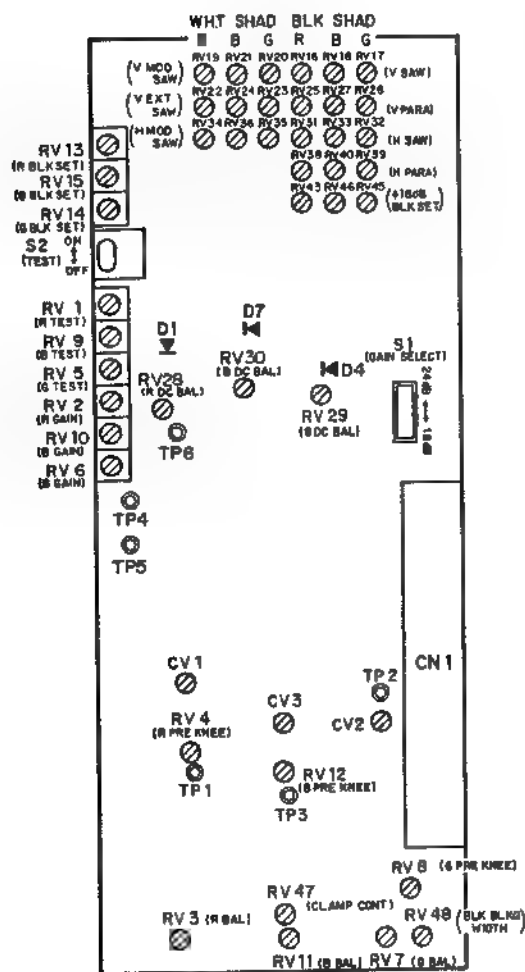
1-8-2. Switches Setting on the Board

[VA-77 board]

. S1 (GAIN SELECT)

By setting the GAIN selector (side panel) to "18", the video output level can be raised by 18dB or 24dB with this switch.

In this case, be sure to perform the +18dB Black Set Adjustment for R, G and B video signals respectively.



VA-77 BOARD (COMPONENT SIDE)

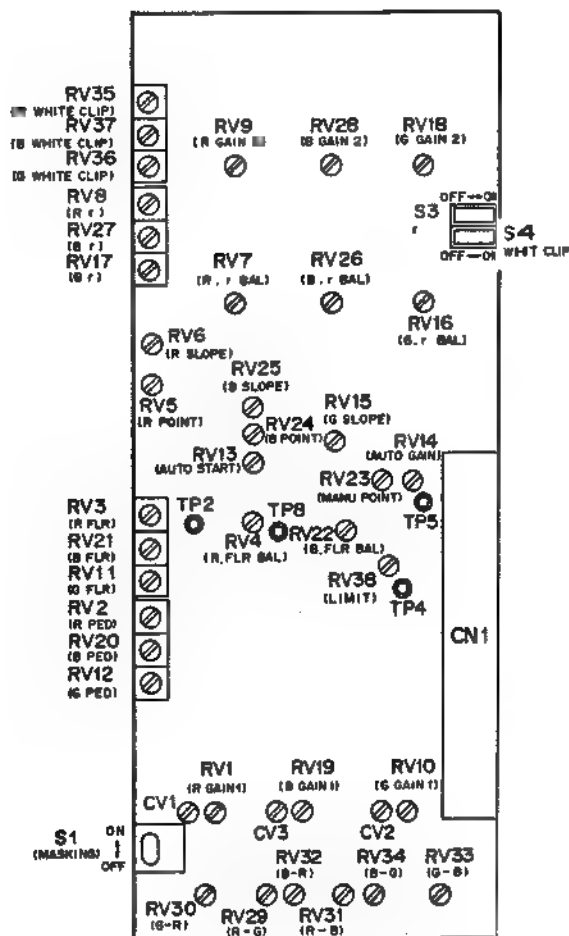
[PR-121/121P board]

. S1 (ON/OFF)

When turned on, the gamma correction is performed so that the overall characteristic of signals between camera and monitor is "γ = 1". Normally set to "ON".

. S4 (WHITE CLIP & KNEE)

When turned off, the white clipping and knee correction are automatically released. Use for the video signal system adjustment. Normally set to "ON".



PR-121/121P BOARD (COMPONENT SIDE)

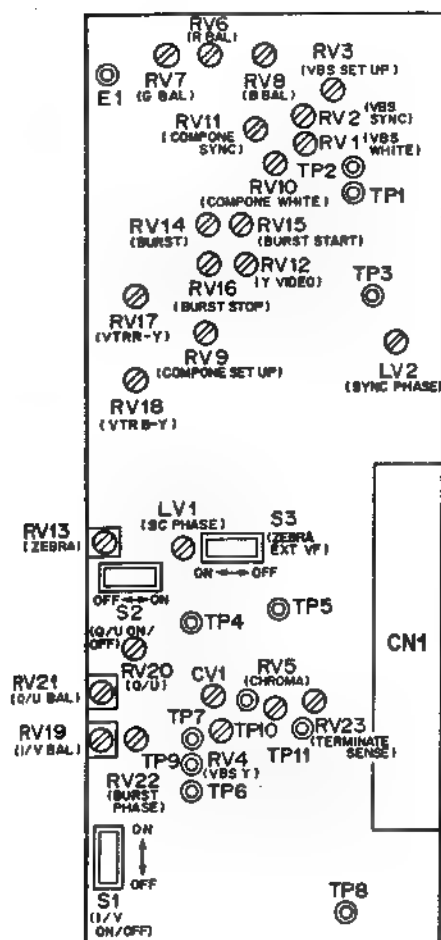
[EN-69/69P board]

. S1 (I/V) S2 (Q/U)

When turned on, the I (Q) signal is added to the encoder circuit. Use for the encoder circuit adjustment. Normally set to "ON".

. S3 (ZEBRA EXT VF)

When viewfinder BVF-50 is used, 70% level portion is displayed in the zebra pattern on the viewfinder screen with this switch set to "ON". Normally set to "OFF".



EN-69/69P BOARD (COMPONENT SIDE)

[PS-173 board]

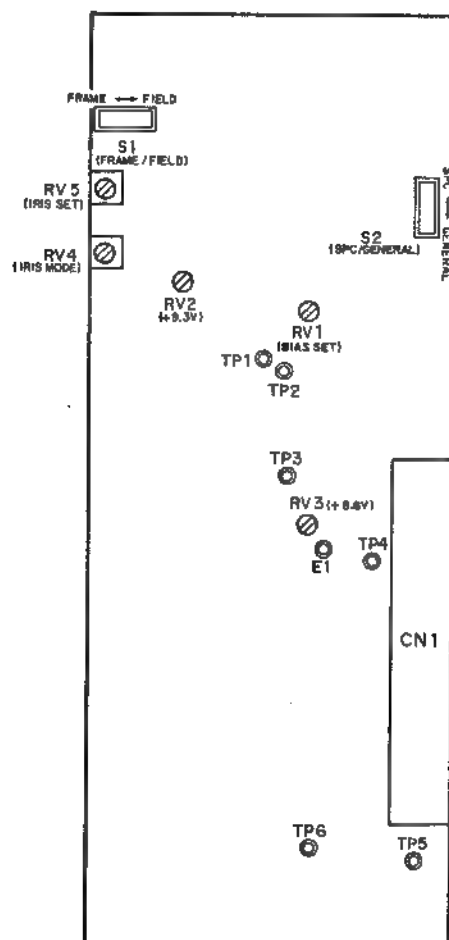
. S1 (FIELD/FRAME)

Selects the ways of CCD picture readout; "FIELD" or "FRAME". It has been set to "FIELD" at the factory.

. S2 (SPC/GENERAL)

Selects the modes of the REC lamp in the Viewfinder and TALLY lamp.

They operate ordinarily with the S2 switch set to "GENERAL". When set to "SPC", they operate as the W/B lamp besides their ordinary functions.



PS-173 BOARD (COMPONENT SIDE)

[SC-143 board]

. S1 (H BLKG SELECT)

Adjusts the horizontal blanking width. It has been adjusted so as to be $10.9 \pm 2\mu\text{s}$.

. S2 (V BLKG SELECT)...NTSC only

Adjusts the vertical blanking width. It has been set to "20H".

. S4 (COLOR FRAME)

When turned on, the color framing pulse is fed from pin 37 of 50-pin connectors.

. S5 (CABLE COMP)

In the external synchronous mode, turns off the GENLOCK signal from a connection cable under 150m and turns on the signal for one exceeding 150m.

. S6 (EXT SC PHASE $0^\circ/180^\circ$)

. RV4 (EXT SC PHASE)

Adjusts the SC (subcarrier) phase of the output signal in the external synchronous mode.

. S7 (INT SC PHASE $0^\circ/180^\circ$)

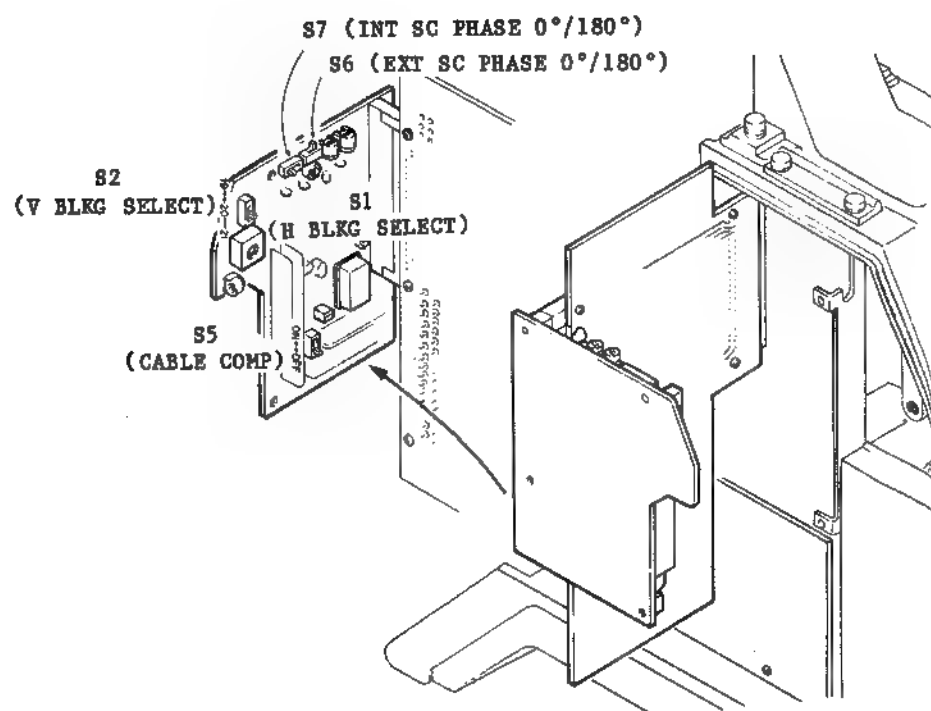
. RV5 (INT SC PHASE)

Adjusts the SC (subscatter) phase of the output signal in the internal synchronous mode.

(Be sure not to turn RV5 except when adjustment is out of condition.)

. RV3 (H PHASE)

Adjusts the phase of the camera video signal in the external synchronous mode.



[AT-52A]

. S1 (CHECK, FP INH)

CHECK

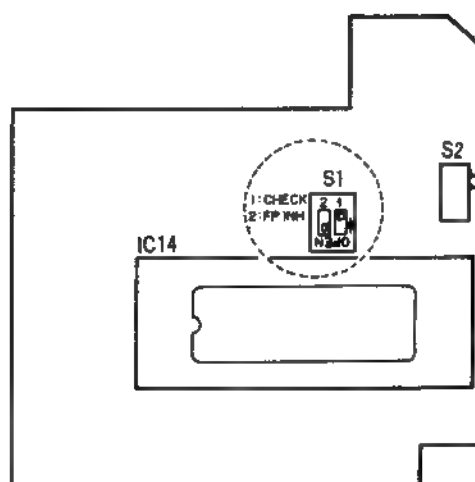
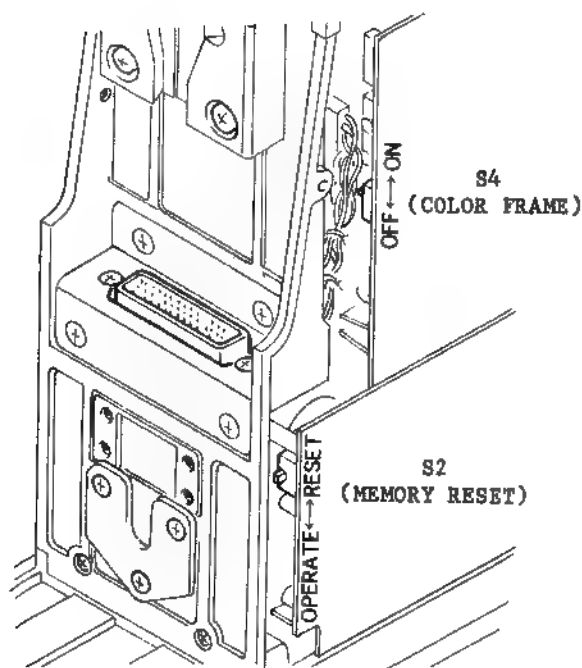
This switch always set to "ON".

FP INH

When set to "OFF (OPEN)", the values of the white balance adjusted at each filter position can be stored in the memory A and B independently. In short, up to 8 adjusted values; 4 for the memory A and 4 for the memory B can be stored. When set to "ON", only 2 adjusted values; one for A and 4 for B can be stored. In this case, the adjusted values will not correspond to the selection of the color temperature conversion filter. According to the selection of WHITE BAL switch (side panel), the white balance value is stored in the memory A and B or read out.

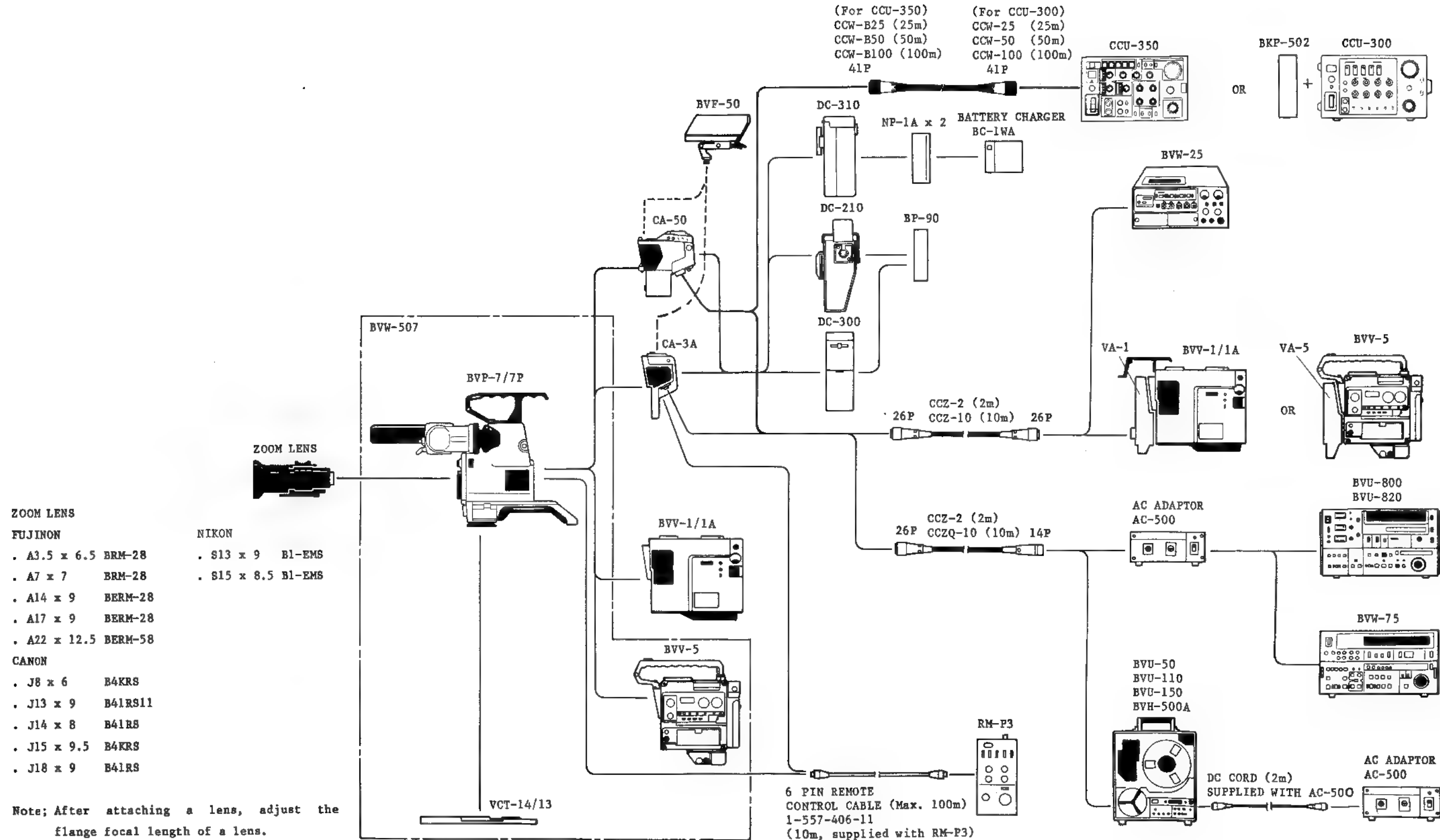
. S2 (MEMORY RESET)

By setting the CAMERA/VTR switch (side panel) to "OFF" and this switch to "RESET", the compensation data stored in the micro-computer can be reset. Normally set to "OPERATE".



AT-52A BOARD (COMPONENT SIDE)

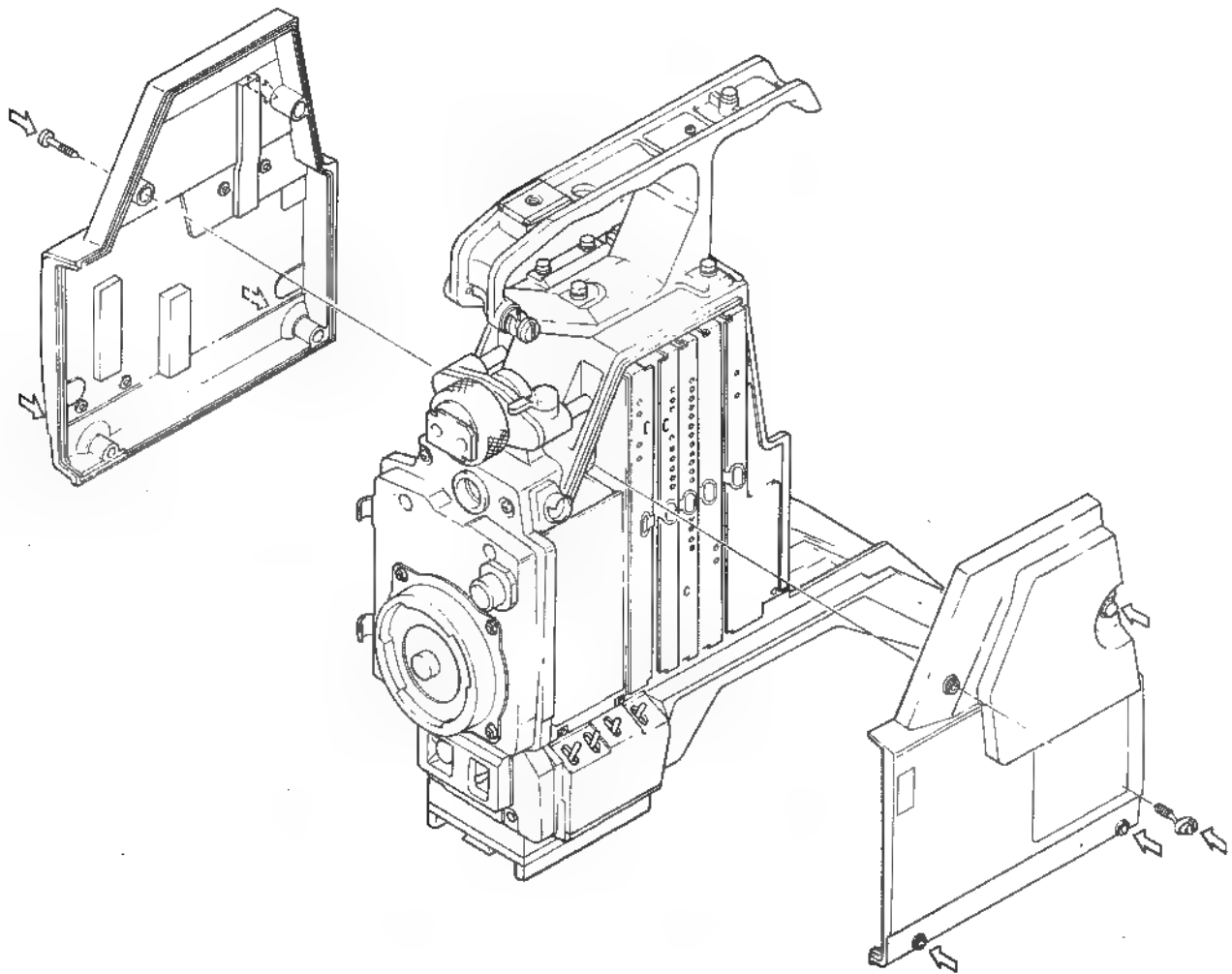
1-9. SYSTEM CONFIGURATION



SECTION 2 REPLACEMENT OF MAIN PARTS

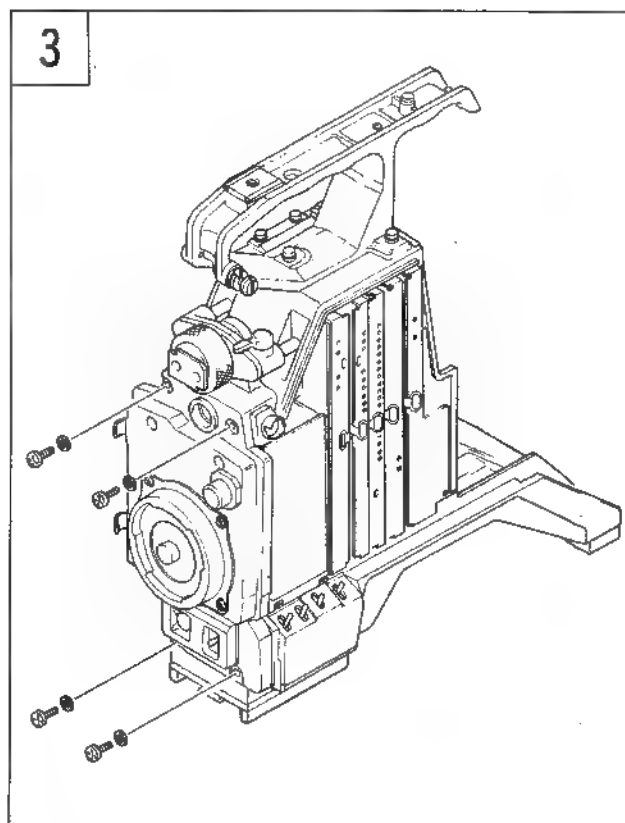
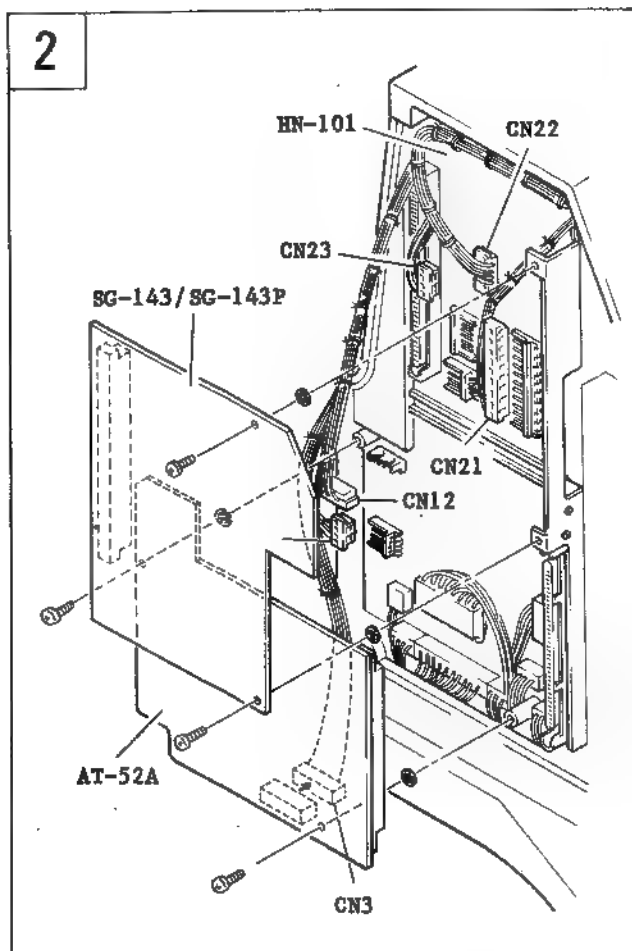
2-1. REMOVAL OF CABINET

Remove eight screws and remove the side panels.

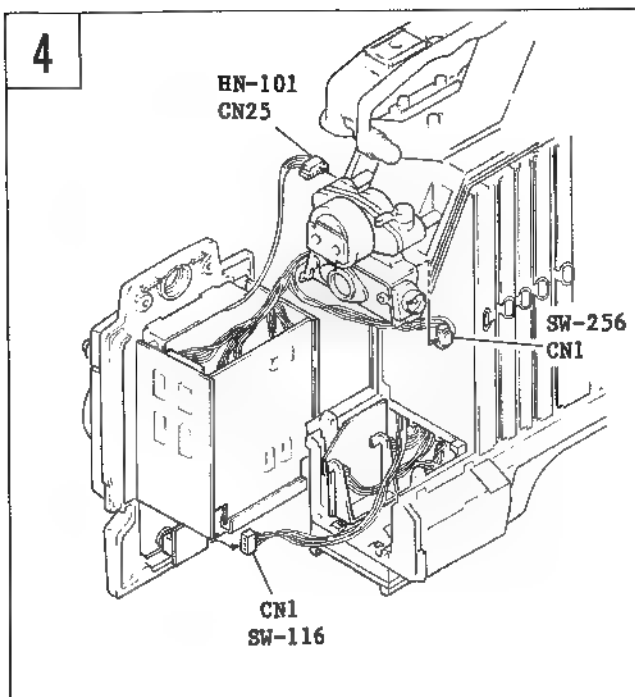


2-2. REPLACEMENT OF CCD UNIT

1. Remove the left and right side panels referring to Section 2-1 "CABINET OF REMOVAL".
2. Remove four screws and remove the AT-52A and SG-143/143P boards. Disconnect the connectors CN21, CN22, CN23 and CN11, CN12 on the HN-101 board and CN3 on the AT-52A board.
3. Remove four screws and remove the front panel.



4. Disconnect the connectors CN25 on the HN-101 board, CN1 on the SW-256 board, CN1 on the SW-116 board respectively.

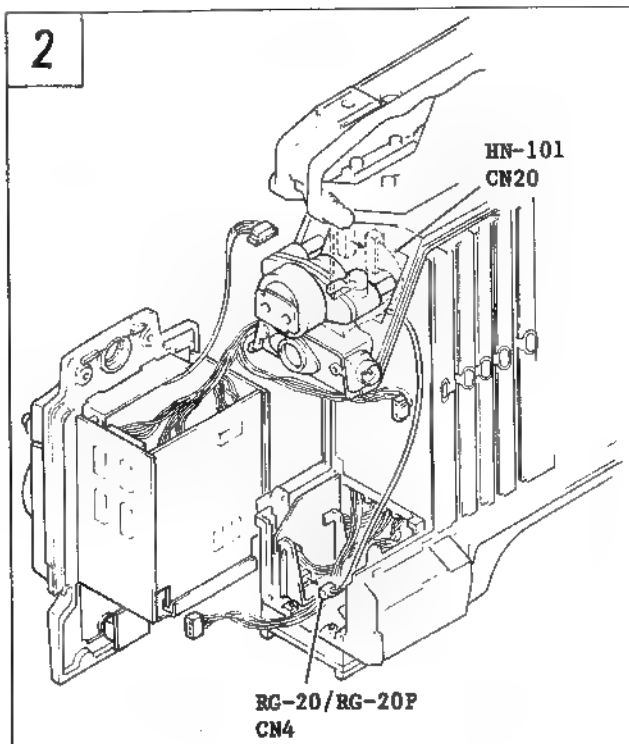


5. When a new CCD unit is installed, reverse the procedures for removal.

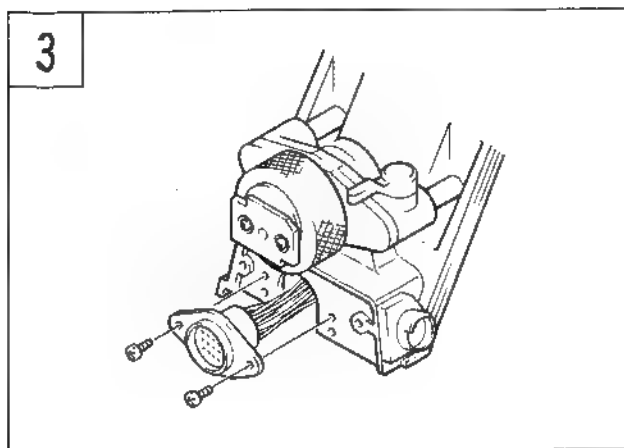
2-3. REPLACEMENT OF CONNECTORS

2-3-1. Replacement of VF Connector

1. Carry out Steps 1 to 4 in Section 2-2.
2. Disconnect the connectors CN20 on the HN-101 board and CN4 on the RG-20/20P board.



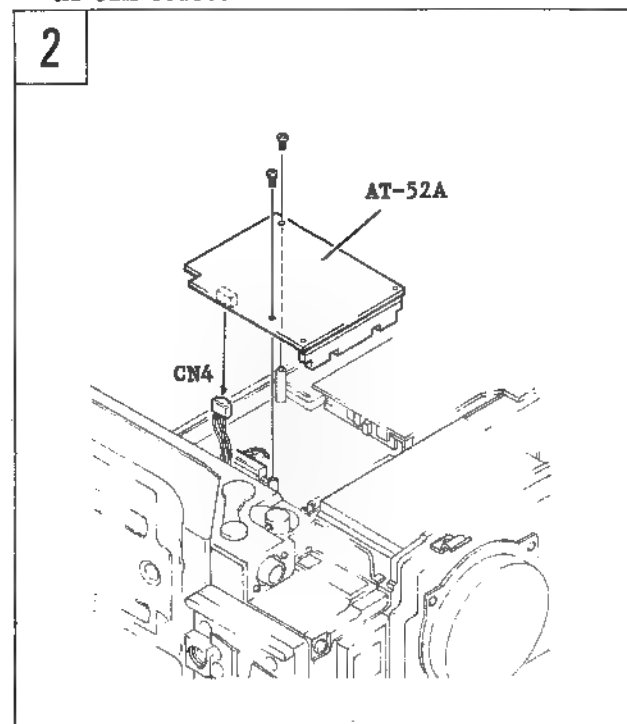
3. Remove two screws securing the VF connector to the camera and pull out the VF connector with harness attached.



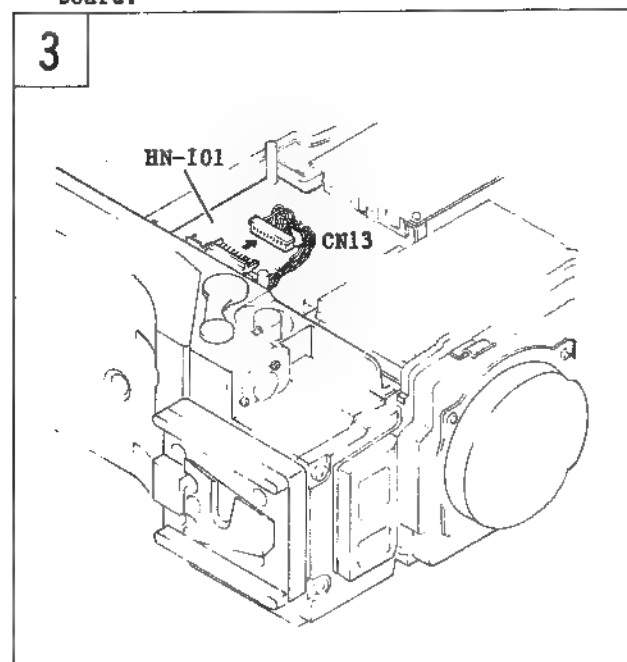
4. When a new VF connector is installed, reverse the procedures for removal.

2-3-2. Replacement of Lens Connector

1. Remove the left side panel referring to Section 2-1 "REMOVAL OF CABINET".
2. Remove two screws and remove the AT-52A board. Disconnect the connector CN4 on the AT-52A board.

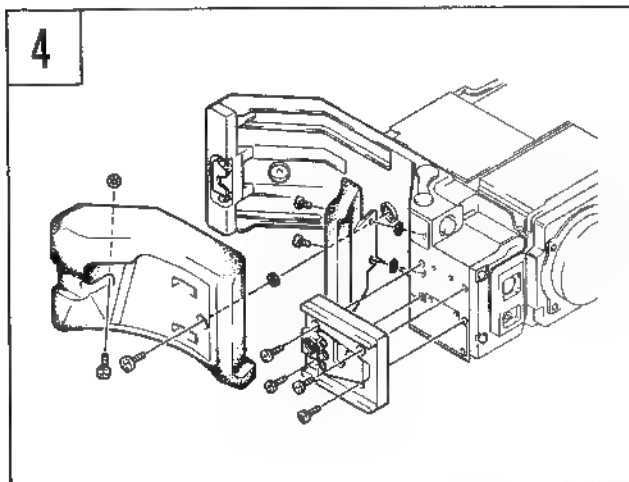


3. Disconnect the connector CN13 on the HN-101 board.

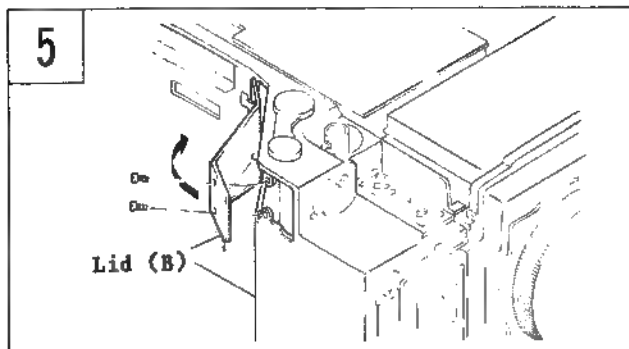


BVP-7 (UC) BVP-7000HS (UC)
BVP-7P (EK) BVP-7000HS P (EK)

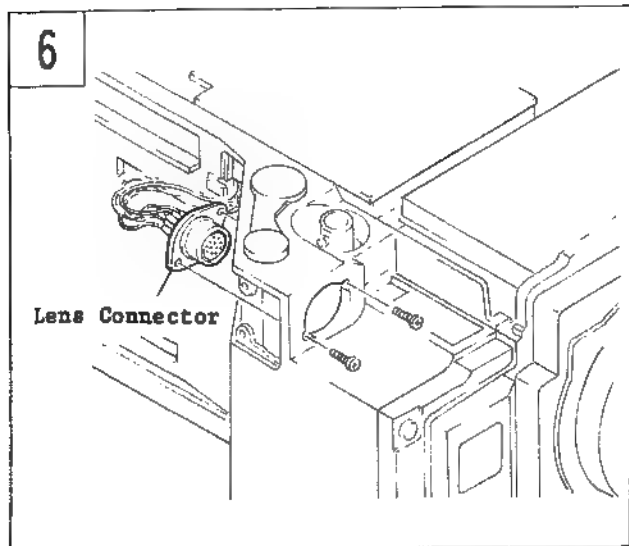
4. Lay the BVP-7/7P as illustrated. Remove the shoulder pad ass'y, shoulder pad (small) and V shoe ass'y.



5. Remove two screws and remove the lid (B).

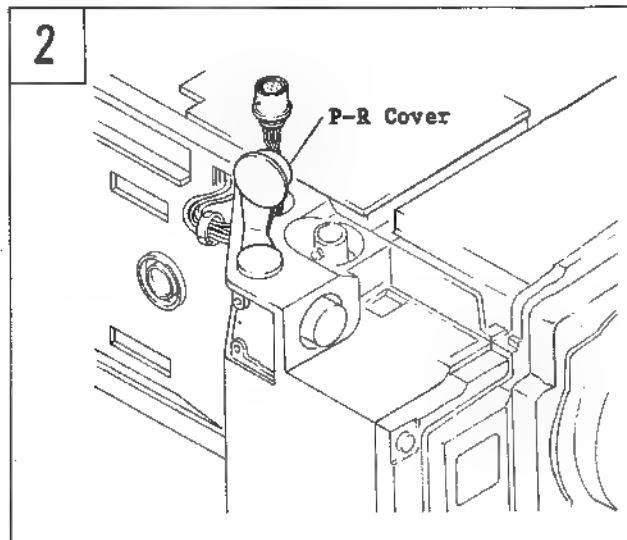


6. Remove two screws and remove the lens connector with harness attached.

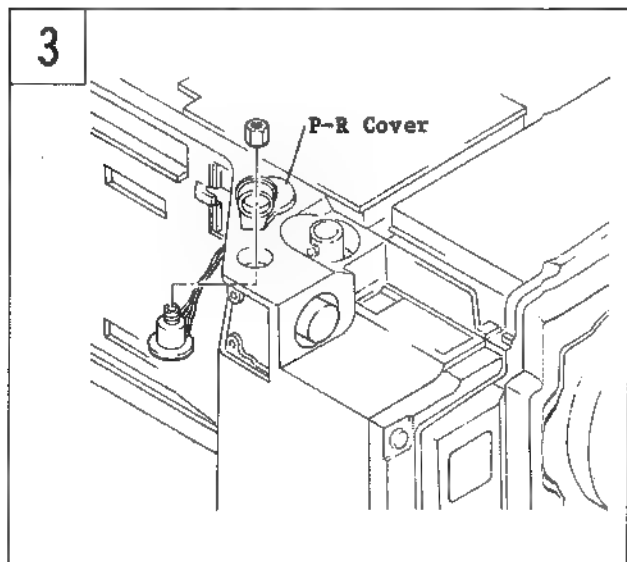


2-3-3 Replacement of Remote Connector and PEDESTAL Control

1. Carry out Steps 1 to 5 in Section 2-3-2.
2. Remove the P-R cover and remove the remote connector with harness attached.



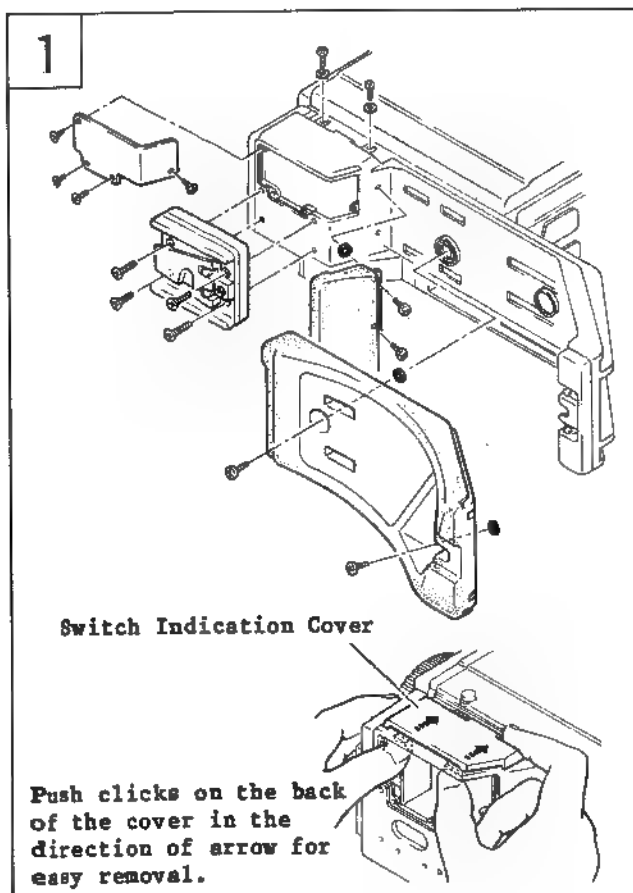
3. Remove the P-R cover and remove a nut and the PEDESTAL control.



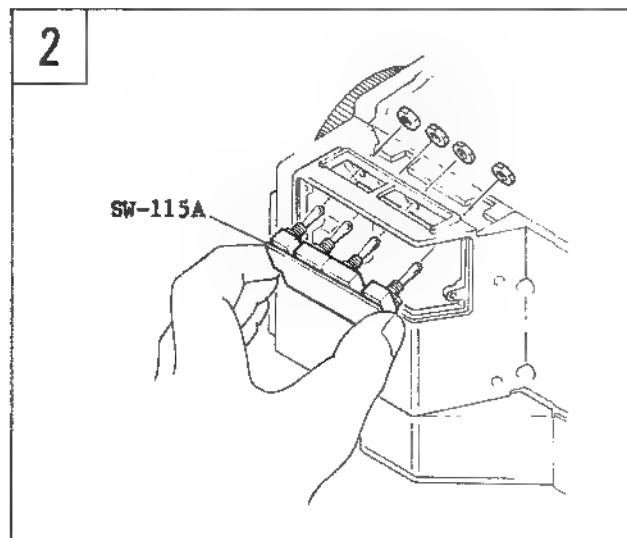
2-4. REPLACEMENT OF FUNCTION SWITCHES

2-4-1. Replacement of the Switches on SW-115A Board

1. Lay the BVP-7/7P as illustrated. Remove the shoulder pad ass'y, shoulder pad (small), V shoe ass'y and lid (A). Remove two screws and remove the switch indication cover.



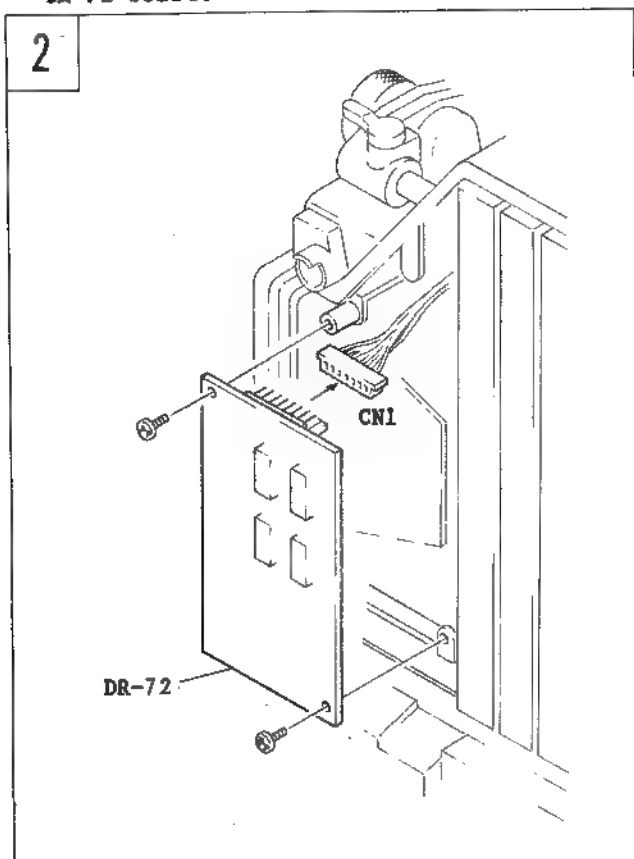
2. Remove four nuts securing the switches and pull out the SW-115A board with switches mounted.



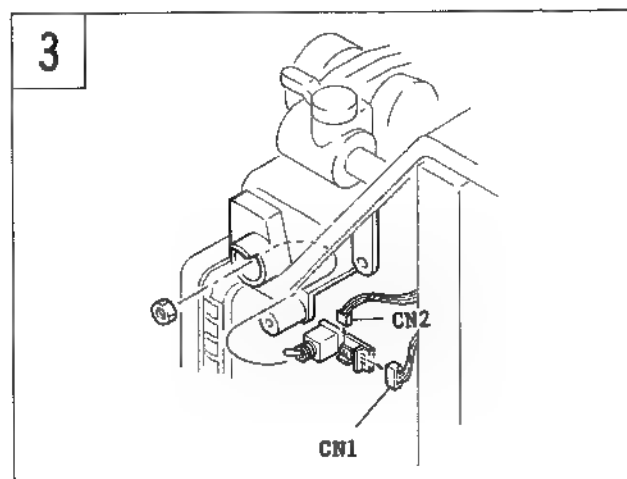
3. Desolder the switch for removal and replace it with a new one.

2-4-2. Replacement of Shutter Switch

1. Remove the right side panel referring to Section 2-1. "REMOVAL OF CABINET".
2. Remove two screws and disconnect the connector CN1 on the DR-72 board. Remove the DR-72 board.



3. Disconnect the connectors CN1 and CN2 on the SW-256 board. Remove the nut securing the switch and pull out the SW-256 board with the switch mounted.



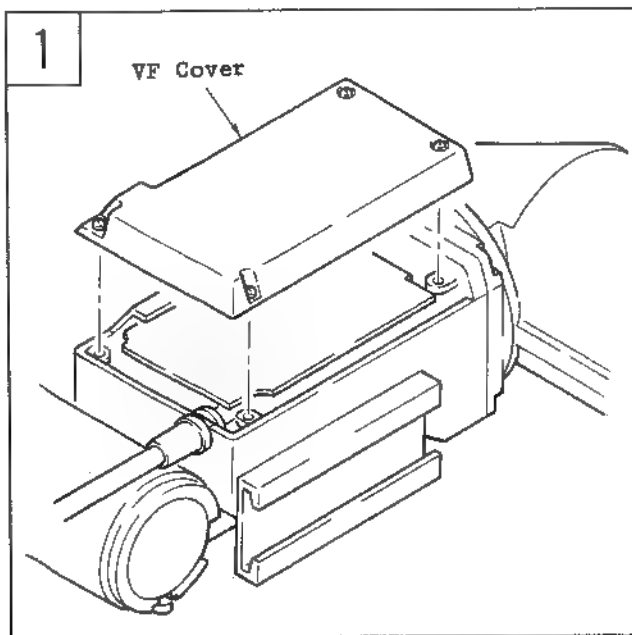
4. Desolder the switch for removal and replace it with a new one.

2-5. REPLACEMENT OF PARTS FOR VIEWFINDER

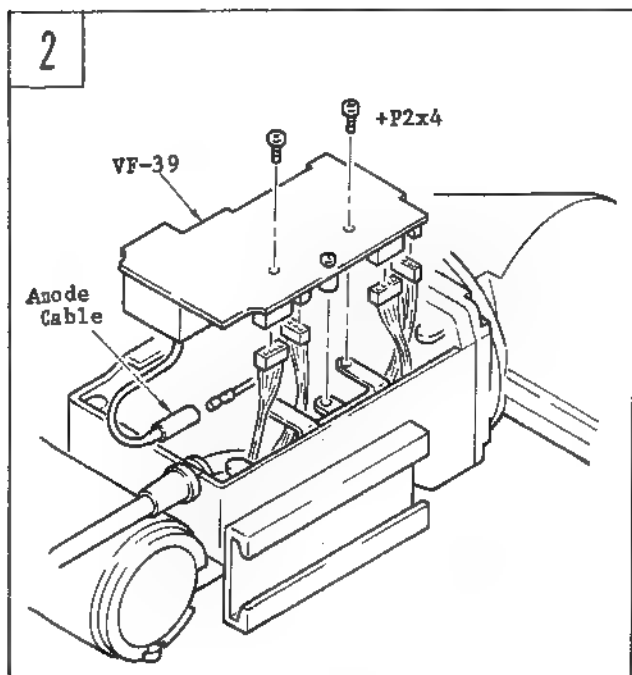
2-5-1. Replacement of CRT

DISASSEMBLE

1. Loosen four screws and remove the VF cover.

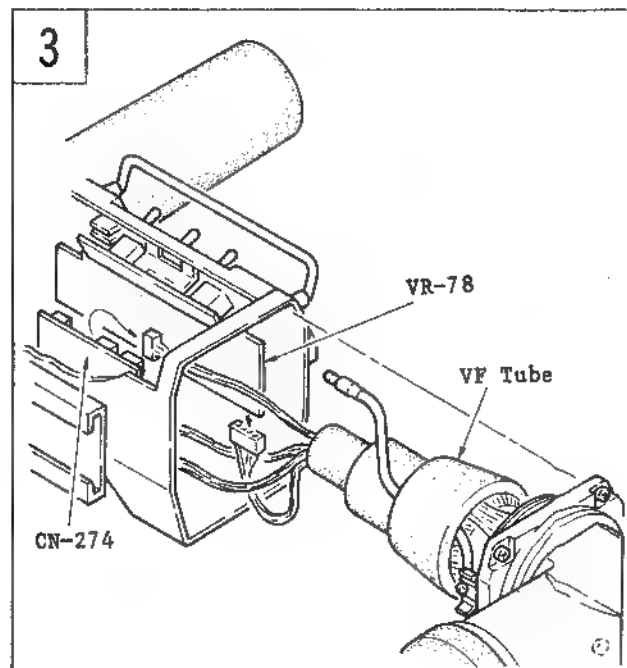


2. Remove three screws and remove the VF-39 board. Disconnect the connector CN1, CN2, CN4, CN5 and anode cable on the VF-39 board.



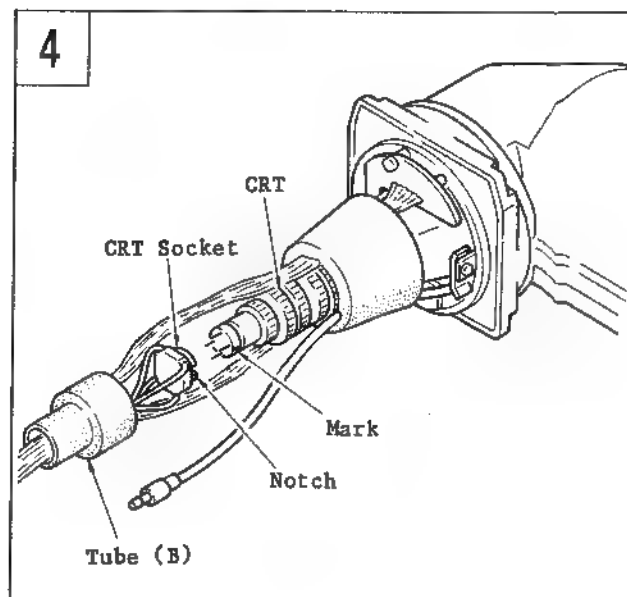
3. Loosen four screws and remove the VF tube.

Disconnect the connector CN14 on the CN-274 board. Disconnect the connector CN23 on the VR-78 board.

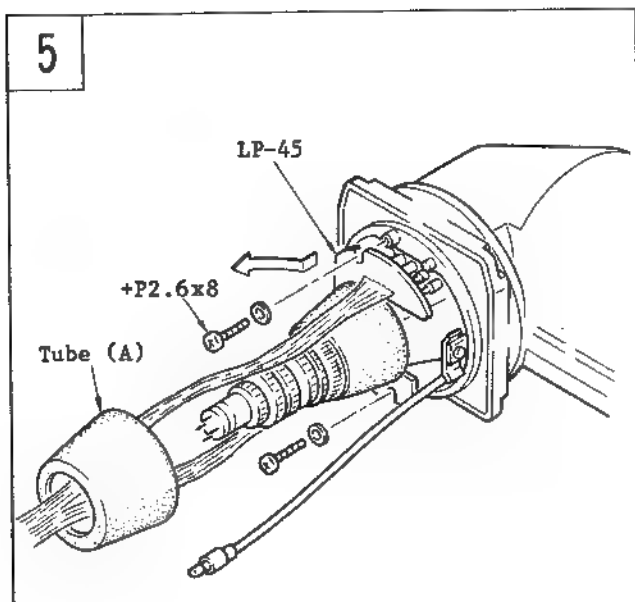


4. Remove the tube (B). Disconnect the CRT socket from the CRT.

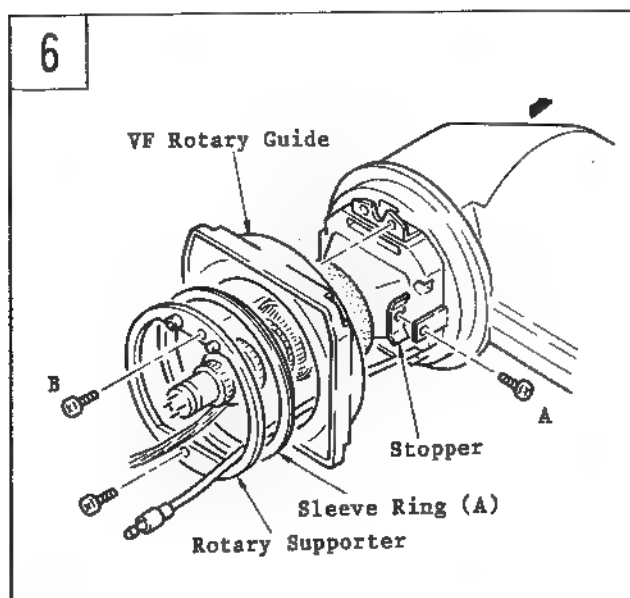
Note: When connecting the CRT socket to the CRT, match a mark on the CRT with a notch of the CRT.



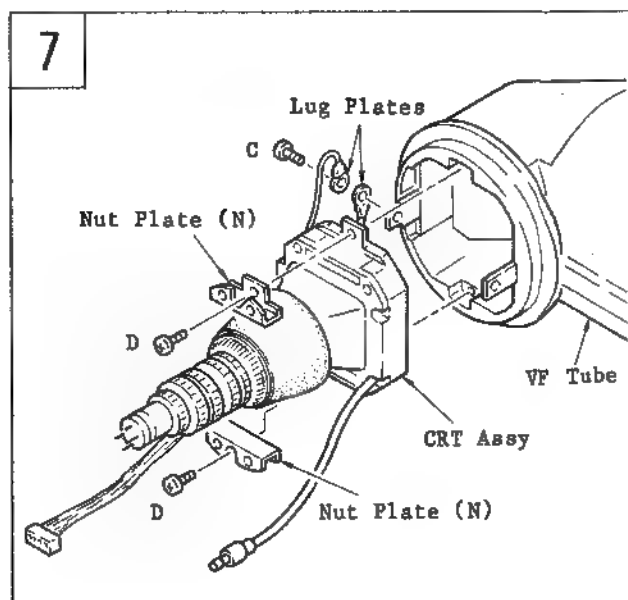
5. Remove the tube (A). Remove two screws and remove the LP-45 board in the direction of arrow.



6. Remove the screw (A) and remove the stopper. Remove two screws (B) and remove the rotary supporter, sleeve ring (A), VF rotary guide.



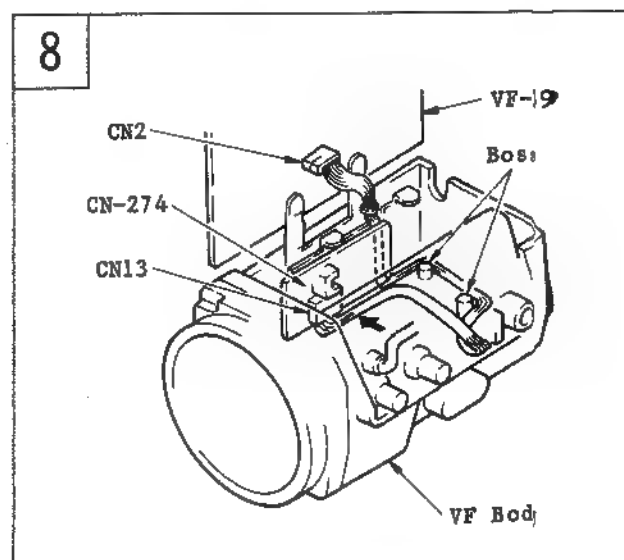
7. Remove the screw (C) and remove the two lug plates. Remove the screw (D) and remove the nut plate. Remove the CRT ASSY from the VF tube.



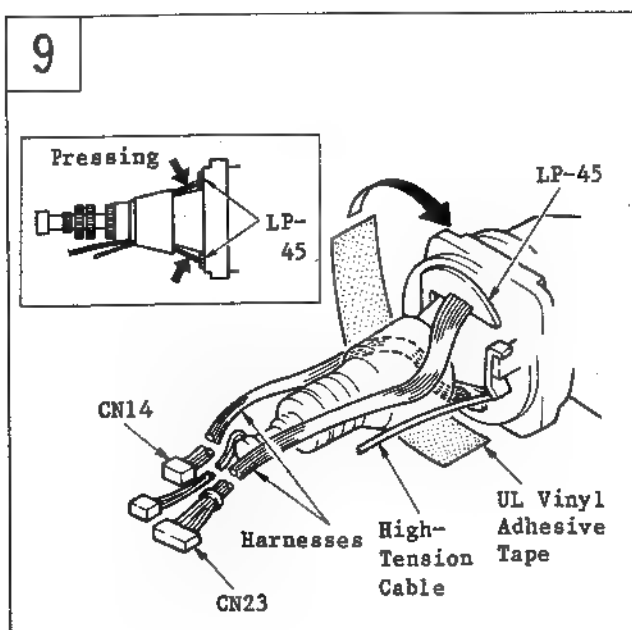
ASSEMBLE

8. Lay the CN2 harness (from the VR-78 board) around the boss of the VF body as shown in the figure, bring it to the back of the CN-274 board, and connect it to the VF-39 board.

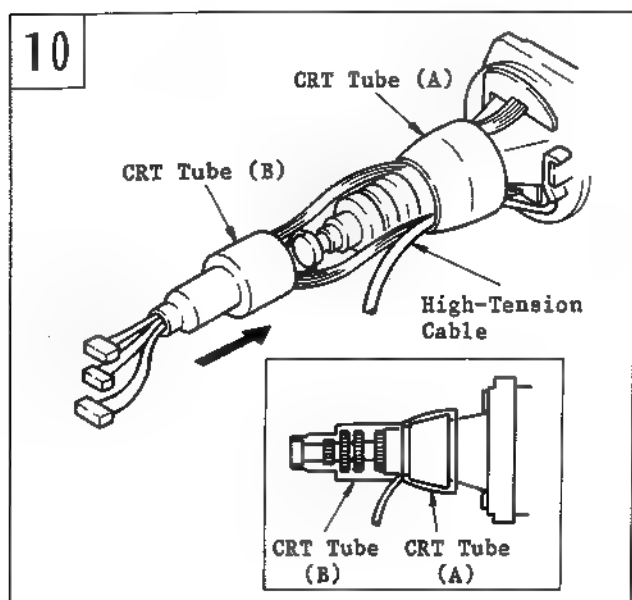
Lay the CN13 harness (from the VR-78) along the CN-274 board so that it is not slack as shown in the figure, and connect it to the CN-274 board.



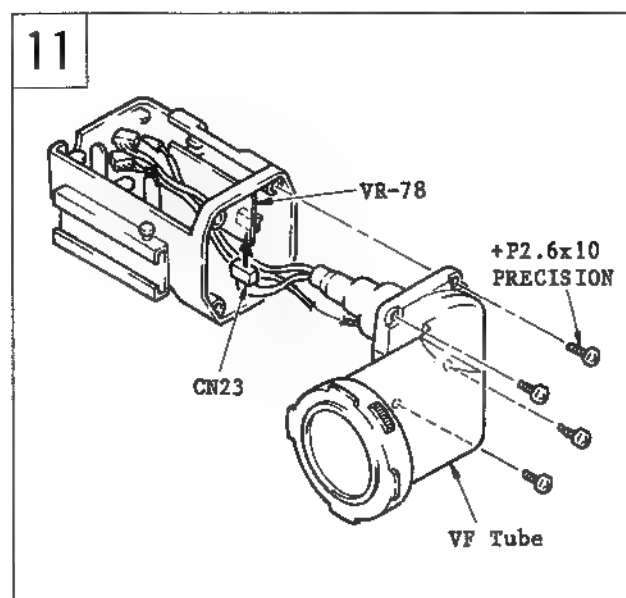
9. Put all wire harnesses from the LP-45 board together and fasten them with UL vinyl adhesive tape while pressing them in the direction shown by the arrows so that they are not laid on one another. The high-tension cable shall be kept straight. The tied harnesses should be pushed against the CRT so that they do not bulge out.



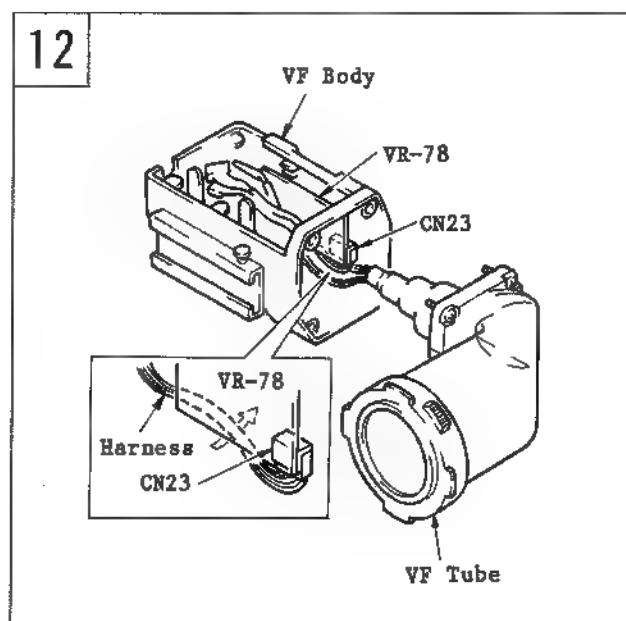
10. Cover the harnesses with CRT tubes (A) and (B) as shown in the figure. Care must be taken so that the harnesses are not slack within the tubes.



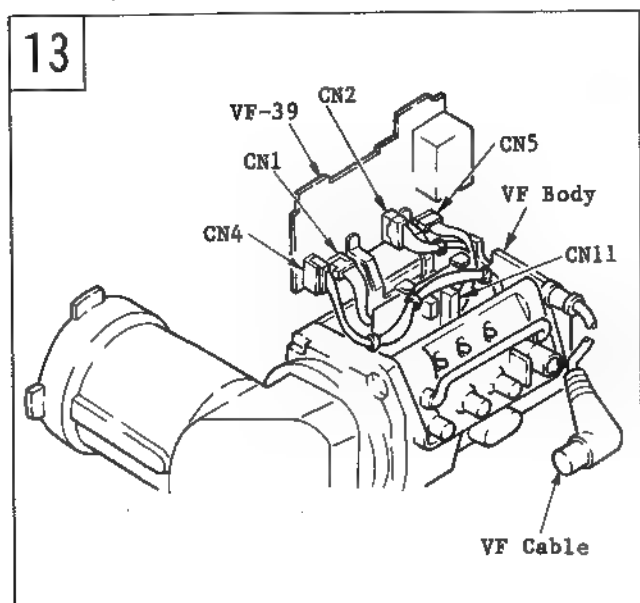
11. Connect the CN23 harness (from the LP-45 board) to the VR-78 board.



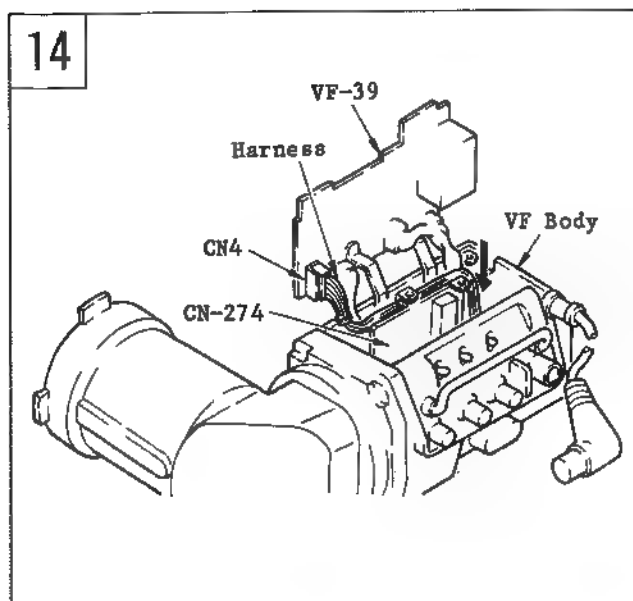
12. Install the VF tube, where the CRT is incorporated, into the VF body so that the harnesses are not placed between the tube and the body. In this case, the CN23 harness shall be laid along the VR-78 board.



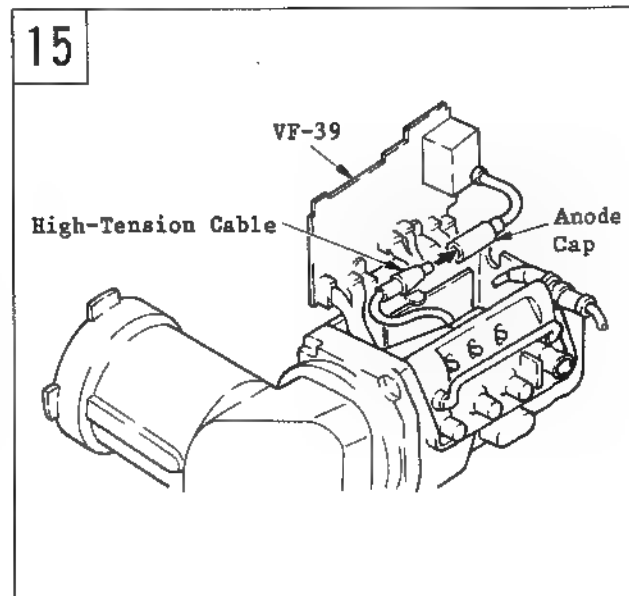
13. Lay the VF cable as shown in the figure so that the CN1, CN2, CN4, and CN5 harnesses go over the VF cable harness, then connect CN1, CN2, CN4, and CN5 to the VF-39 board.



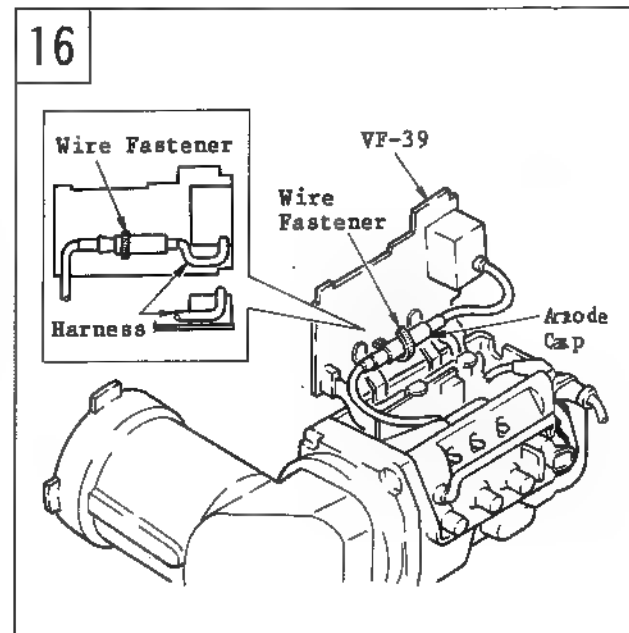
14. Put the CN4 harness between the CN-274 board and the VF body, and push the slack in the harness in the direction shown by the arrow.



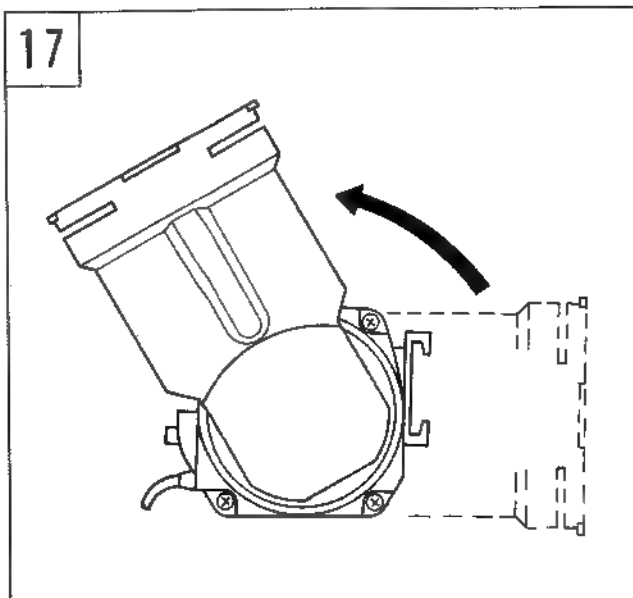
15. Insert the high-tension cable (from the CRT) into the anode cap of the VF-39 board until it locks.



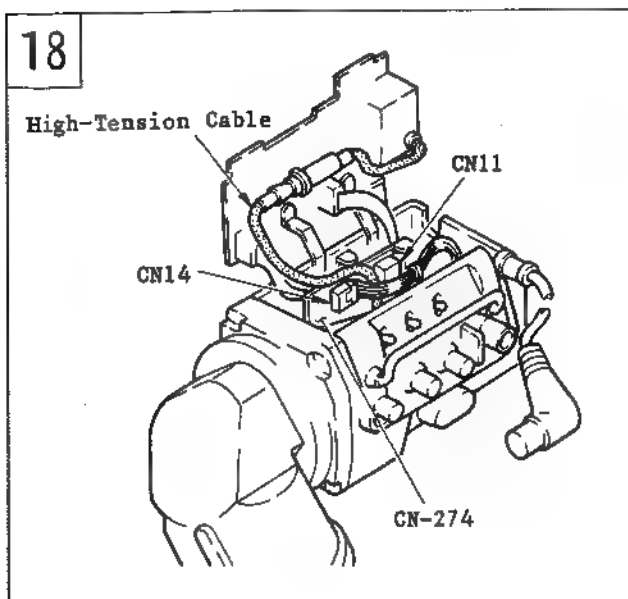
16. Clamp the anode cap in the place shown in the figure with the wire fastener and position the harness at the side of the transformer.



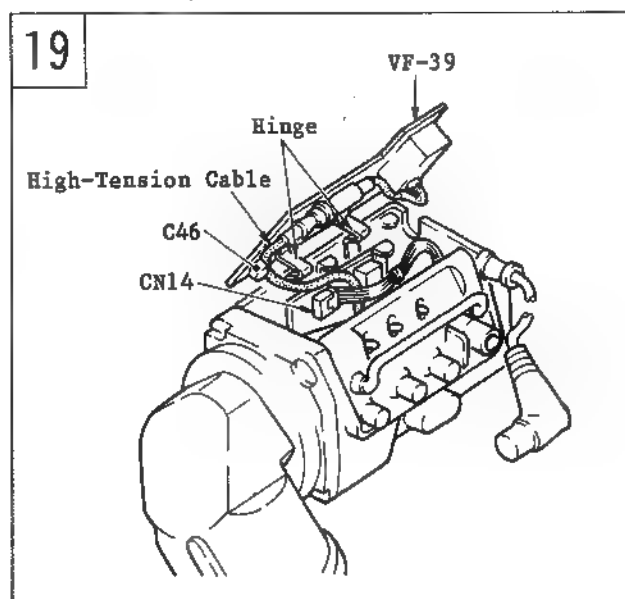
17. Turn the VF tube fully as shown in the figure and perform the following procedure.



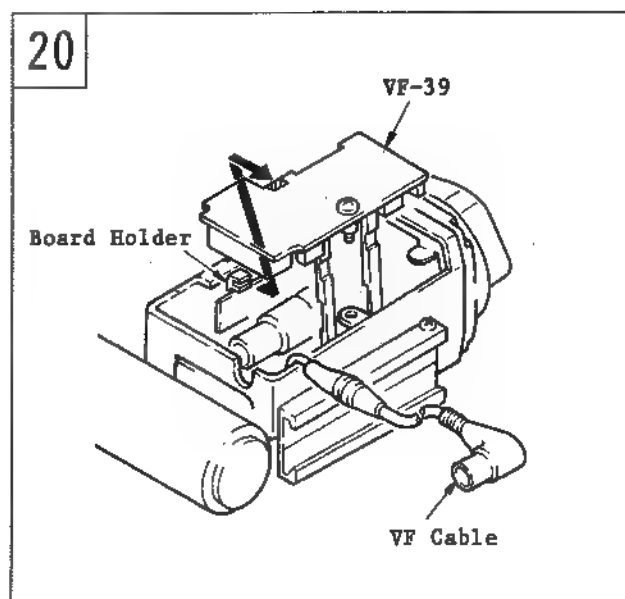
18. Put the CN14 harness from the CN-274 board on the high-tension cable and connect the CN14 to the CN-274 board so that the high-tension cable is passed between the CN14 and the CN11.



19. Lay the high-tension cable on the CN14 as shown in the figure and pass the cable between the C46 and the board hinge. Close the VF-39 lightly and place the board on the VF body so that the high-tension cable is positioned under the board hinge.

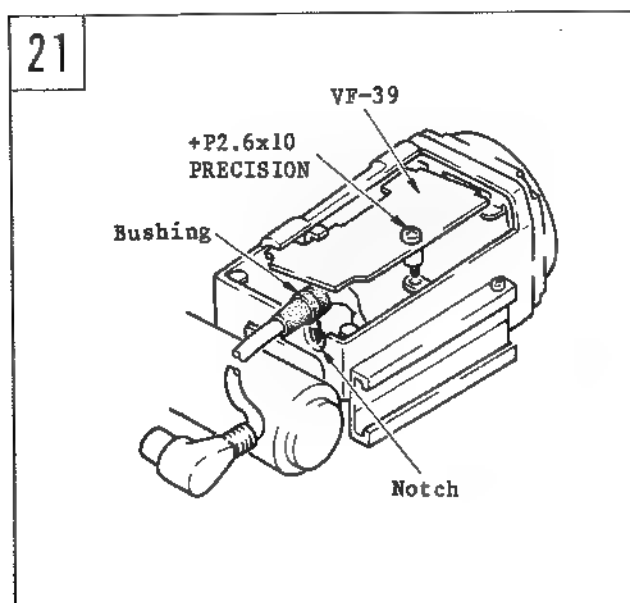


20. Position the VF cable as shown in the figure and install the VF-39 into the board holder.



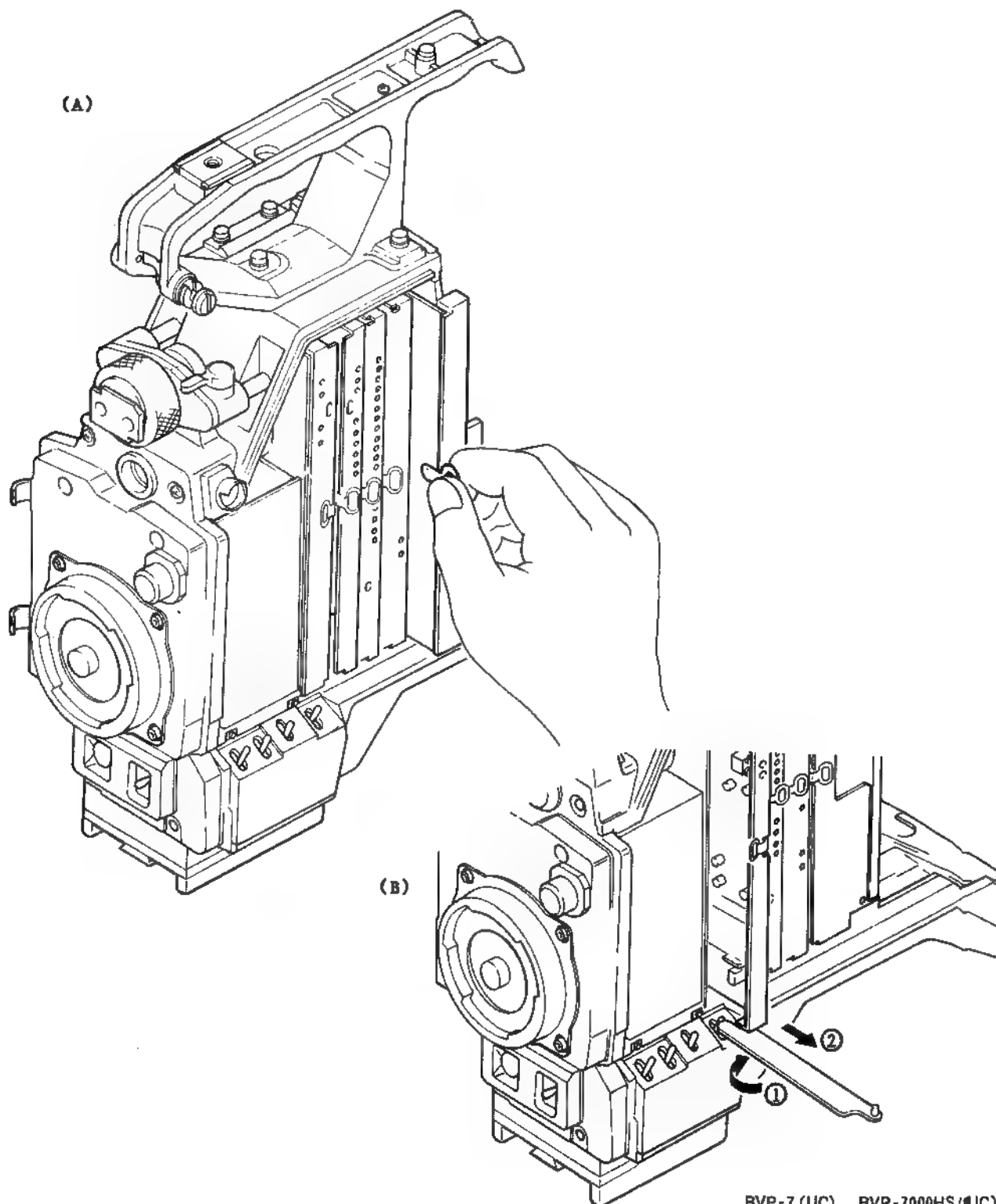
21. Insert the rubber bushing of the VF cable into the notch of the VF body so it matches the shape of the notch and close the VF-39.

Lastly, fasten the VF-39 with the supplied precision screw (+P2.6x10), with the board mounting metals.



2-6. TO EXTRACT THE BOARDS

- (A) Pull the pull lever attached to each board toward you.
- (B) Put the board extractor (supplied accessory) in a hole at the bottom of the board. Move it in the direction of arrow ①, then pull in the direction of arrow ②.

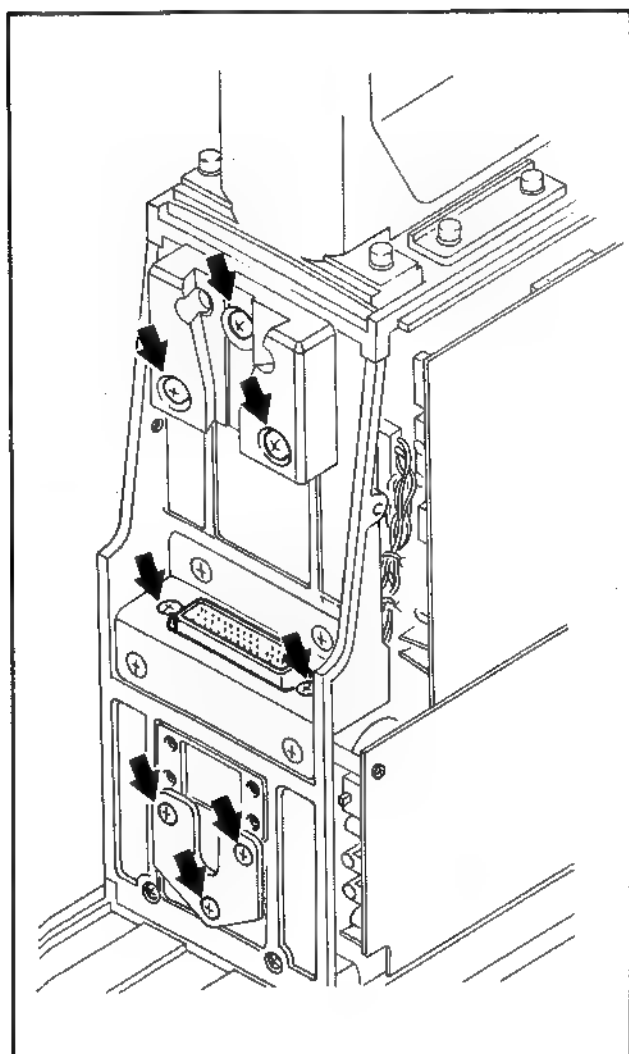


2-7. PRECAUTION ON REPLACEMENT OF VTR CONNECTOR (50P CONNECTOR)

The VTR connector (50-pin connector), camera shoe and chassis should be accurately positioned respectively. When the above parts are replaced, it is necessary to adjust using a high-precision special tool (CV positioning tool) so as to keep the accurate relation and to dock with any of BVV-5.

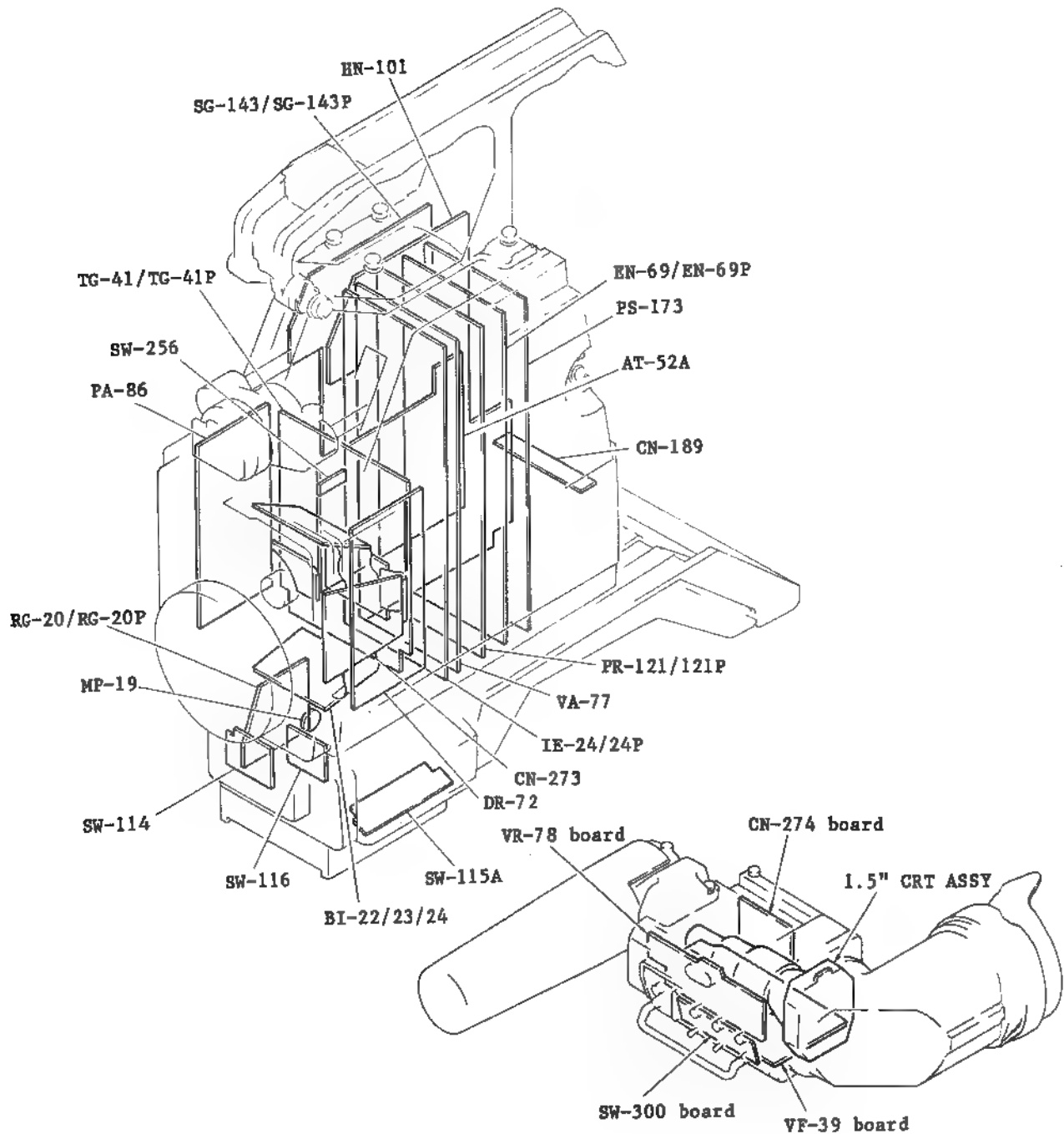
Avoid loosening or removing eight screws as shown in the figure.

For details, see "BETACAM CAMERA manual - Replacement of 50 pin connector-" prepared by Sony Corporation.



SECTION 3 SERVICE INFORMATION

3-1. MAIN PARTS LAYOUT



3-2. CIRCUIT DESCRIPTION

- CCD CONTROL SYSTEM (TG41/41P, DR-72, BI-22, 23, 24, PA-86 boards)

- TG41/41P board

It sends the pulse for driving the CCD to DR-72 board and the pulse for sampling the video signal output from the CCD to PA-86 board. Driving pulse synchronizes with the synchronizing signal sent from SG-143/143P board.

14MHz counted down from 28MHz is also supplied to SG-143/143P board.

- DR-72 board

It converts the driving pulse sent from TG-41/41P board so as to drive the CCD directly. Converted pulse is sent to BI-22, 23, 24 board and transmitted to the CCD.

- BI-22, 23, 24 board

It mounts the CCD. Driving pulse and DC voltage for control are added to the CCD on the board.

The video signal output from the CCD is sent through the emitter follower to PA-86 board.

- PA-86 board

It eliminates the pulse component of the video signal sent from BI-22, 23, 24 board. Then the signal processings such as the black level fixing, phase offset adjustment for resolution improvement and amplification by preamplifier are performed on the board, then the video signal is sent to VA-77 board.

- VIDEO SIGNAL SYSTEM (VA-77, IE-24/24P, PR-121/121P, EN-69/69P boards)

- VA-77 board

It amplifies the video signal sent from PA-86 board and processes the black shading correction, gain-up control, blanking cleaning and white shading correction. It also selects the video signal or the TEST SAW signal.

- IE-24/24P board

It generates the detail signal obtained from G and R video signal so as to improve resolution. The detail signal is sent to PR-121/121P board, then added to R, G and B video signals.

G video signal is delayed by 1H, then sent to PR-121/121P board.

- PR-121/121P board

The masking signal and detail signal are added to R, G and B video signals respectively and the flare compensation, pedestal control, knee correction, white clipping and gamma correction are performed on the board. Then the video signal is sent to EN-69/69P board.

- EN-69/69P board

It generates the luminance (Y) signal, color difference (B-Y, R-Y) signals and composite video (VBS) signal obtained from R, G and B video signals. It also supplies the SMPTE: NTSC (EBU:PAL) color-bar signals.

• POWER SUPPLY SYSTEM (PS-173 board)

• PS-173 board

Externally supplied unregulated DC power is sent to the switching regulator, DC to DC converter and series regulator to generate voltages of +8.8Vdc, +5Vdc and -5Vdc for the respective boards.

It also supplies voltages for the VIEWFINDER and for CCD control.

• SYNCHRONIZING SIGNAL SYSTEM (SG-143/143P board)

• SG-143/143P board

It generates various synchronizing signals.

It detects the genlock signal automatically and synchronizes with it.

• AUTOMATIC CONTROL SYSTEM (AT-52A, PS-173 boards)

• AT-52A board

Microcomputer unit on AT-52A board sends to the control signal and compensation signal to appropriate boards in accordance with the selection of function switches.

It also detects the internal temperature, position of color temperature conversion filter, PEDESTAL control and video level automatically, then compensates the video signals and displays various warnings.

• PS-173 board

If contains the auto iris circuit and VTR-CAMERA interface circuit.

The former detects the video level at any time and adjusts the iris control.

The latter controls the input and output of the START/STOP control signal and warning signal between camera and VTR.

3-3. SERVICING PRECAUTION

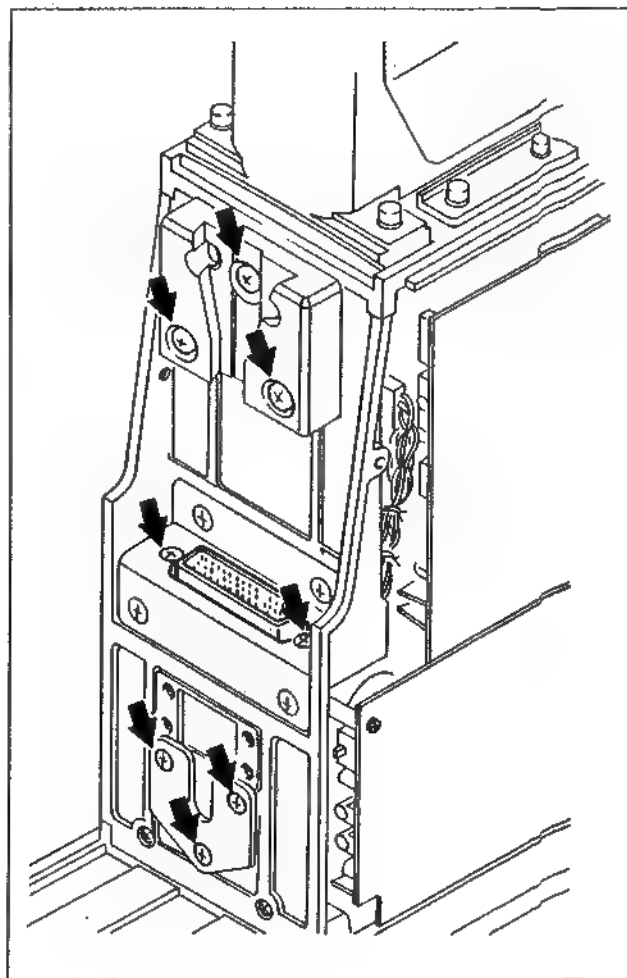
3-3-1. Precautions on Replacement of VTR Connector (50P Connector)

The VTR connector (50 pin connector) is attached using a high-precision special tool (CV positioning) so as to keep the accurate positioning relation with VTR mount (C shoe) and to dock with any of BVV-1/1PS, BVV-1A/1APS and BVV-5/5PS.

Avoid to loosen or remove the screws for 50P connector, C SHOE and stopper (in all, eight screws).

It is necessary to adjust using a jig, when the above parts are replaced.

For replacement of the VTR connector (50-pin connector), contact your Sony dealer.



3-3-2. Warning of CCD Image Sensor Replacement

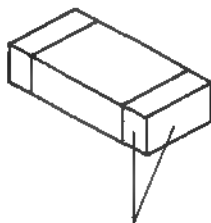
The BI-22, 23, 24 board on which the CCD is mounted had better not be removed.

When removing it, the CCD is sometimes broken by the static electricity.

If the CCD is broken, the whole CCD unit must be replaced.

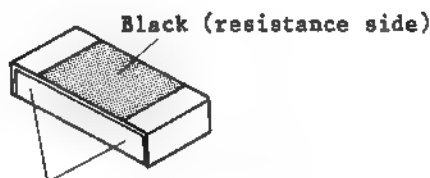
3-3-3. Precaution on Replacement of Chip Parts

Capacitor



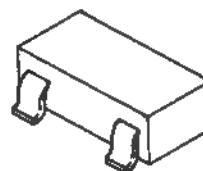
Covered with electrode.

Resistor



Not covered with electrode.

Diode and Transistor



Tools required:

Soldering iron of approx. 20W

(Use a temperature controller, if possible, which can control the iron temperature to $270 \pm 10^\circ\text{C}$.)

Braided wire (SOLDER TAUL)

Solder (A solder of 0.6mm in diameter is recommended.)

Tweezers

Soldering conditions:

Iron temperature of $270 \pm 10^\circ\text{C}$

A connector should be soldered within 2 seconds.

The chip parts removed should not be used again.

For details, refer to CHIP COMPONENTS MANUAL, Sony's parts No. 9-972-289-91 prepared by Sony Corporation.

Procedures

1. To remove a resistor or capacitor, place the tip of a soldering iron on chip parts to heat the parts, and then move it horizontally for removal while being desoldered. For removal of a diode or transistor, heat the one side, with two pins, of chip parts at the same time, set the parts up when desoldered, and remove the two pins. And then, remove the pin on another side.
2. Absorb solder by using a braided wire to smooth the land surface of board after removal.
3. Confirm by visual check that no trace of the removed chip parts is peeled off and no adjacent parts is damaged or bridged.
4. Perform a thin pretinning on the trace.
5. Place new chip parts on the trace to solder its both sides.
 BVP-7(UC) BVP-7000H Φ (UC)
 BVP-7P(EK) BVP-7000H Φ P(EK)

3-3-4. Precaution of Replacement Parts

1. Safety Related on Components Warning

Components identified by shading marked with Δ on the schematic diagrams, exploded views and electrical spare parts list are critical to safe operation. Replace these components with Sony parts whose parts numbers appear as shown in this manual or in service manual supplements published by Sony.

2. Standardization of Parts

Replace Parts that are supplied from Sony Parts Center can sometimes have different shape and external appearance than what are actually used in equipment. This is due to "accommodating the improved parts and/or engineering changes" or "standardization of genuine parts."

- . This manual's exploded view and electrical spare parts lists are indicating the parts numbers of "the standardized genuine parts at present."
- . Regarding engineering parts and diagrams changes in our engineering department, refer Sony service bulletins and service manual supplements.

3. Stocked of Parts

The parts marked with "S" in the SP column of the exploded views and electrical spare parts list are normally required for routine service work. Orders for parts marked with "O" will be proceed, but allow for additional delivery time.

4. Units of Capacitors, Inductors, and Resistors

The following units are omitted in the schematic diagrams, exploded views, and electrical part lists unless otherwise specified;

Capacitor: μF

Inductor: μH

Resistor: Ω

3-4. TOOLS AND JIGS

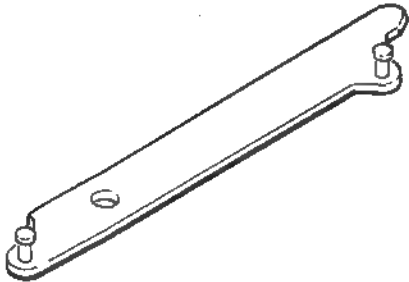
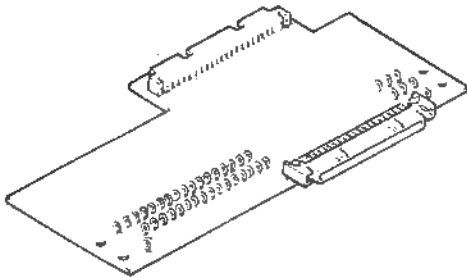
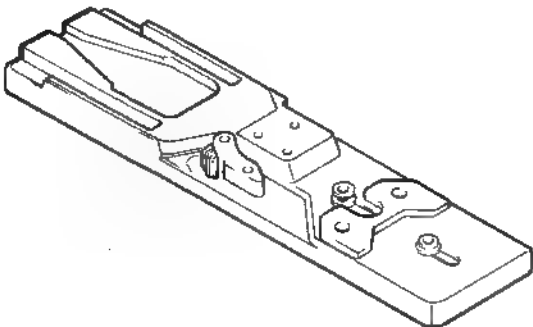
Part No.	Description
A-7520-253-A	Extension board "EX-108" (supplied)
J-6026-100-A	Resolution chart
J-6026-110-A	Multi-burst chart
J-6026-120-A	Registration chart
J-6026-130-B	Gray-scale chart
J-6029-140-A	Pattern box "PTB-500"
J-6196-080-B	DC Power cord
3-692-589-01	Board Extractor
7-700-733-01	Adjusting screwdriver (1.5mm/4mm)

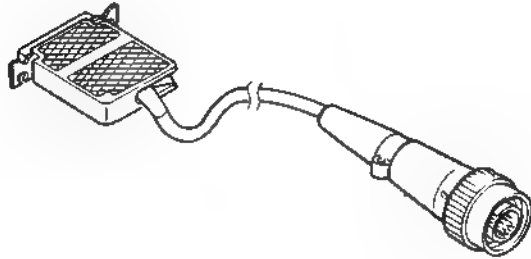
SECTION 4 ALIGNMENT

4-1. PREPARATION

4-1-1. Adjustment Fixtures and Equipments

<div data-bbox="164 510 584 544" data-label="Caption"> <p>J-6026-100-A Resolution Chart</p> </div> <div data-bbox="245 613 681 945" data-label="Image"> </div>	<div data-bbox="855 510 1272 544" data-label="Caption"> <p>J-6026-110-A Multiburst Chart</p> </div> <div data-bbox="933 613 1382 945" data-label="Image"> </div>
<div data-bbox="169 1043 577 1079" data-label="Caption"> <p>J-6026-130-A Grayscale Chart</p> </div> <div data-bbox="162 1095 777 1167" data-label="Text"> <p>Stick the velvet (black) at the both sides of white pattern in the center so as to avoid the light leakage.</p> </div> <div data-bbox="253 1189 689 1514" data-label="Image"> </div>	<div data-bbox="857 1043 1295 1077" data-label="Caption"> <p>J-6026-120-A Registration Chart</p> </div> <div data-bbox="938 1153 1386 1485" data-label="Image"> </div>
<div data-bbox="341 1579 601 1612" data-label="Caption"> <p>White Window Chart</p> </div> <div data-bbox="164 1630 777 1702" data-label="Text"> <p>Make a hole in the center of black paper as shown in the figure.</p> </div> <div data-bbox="260 1731 692 2051" data-label="Image"> </div>	<div data-bbox="857 1574 1477 1624" data-label="Caption"> <p>J-6029-140-A Pattern Box PTB-500 (90 to 240 V_ac) with Color-bar Chart attached</p> </div> <div data-bbox="965 1657 1358 2051" data-label="Image"> </div>

3-692-589-01	Board Extractor
	
A-7520-253-A	Extension board (EX-108)
	
	Tripod Adaptor (VCT-14)
	

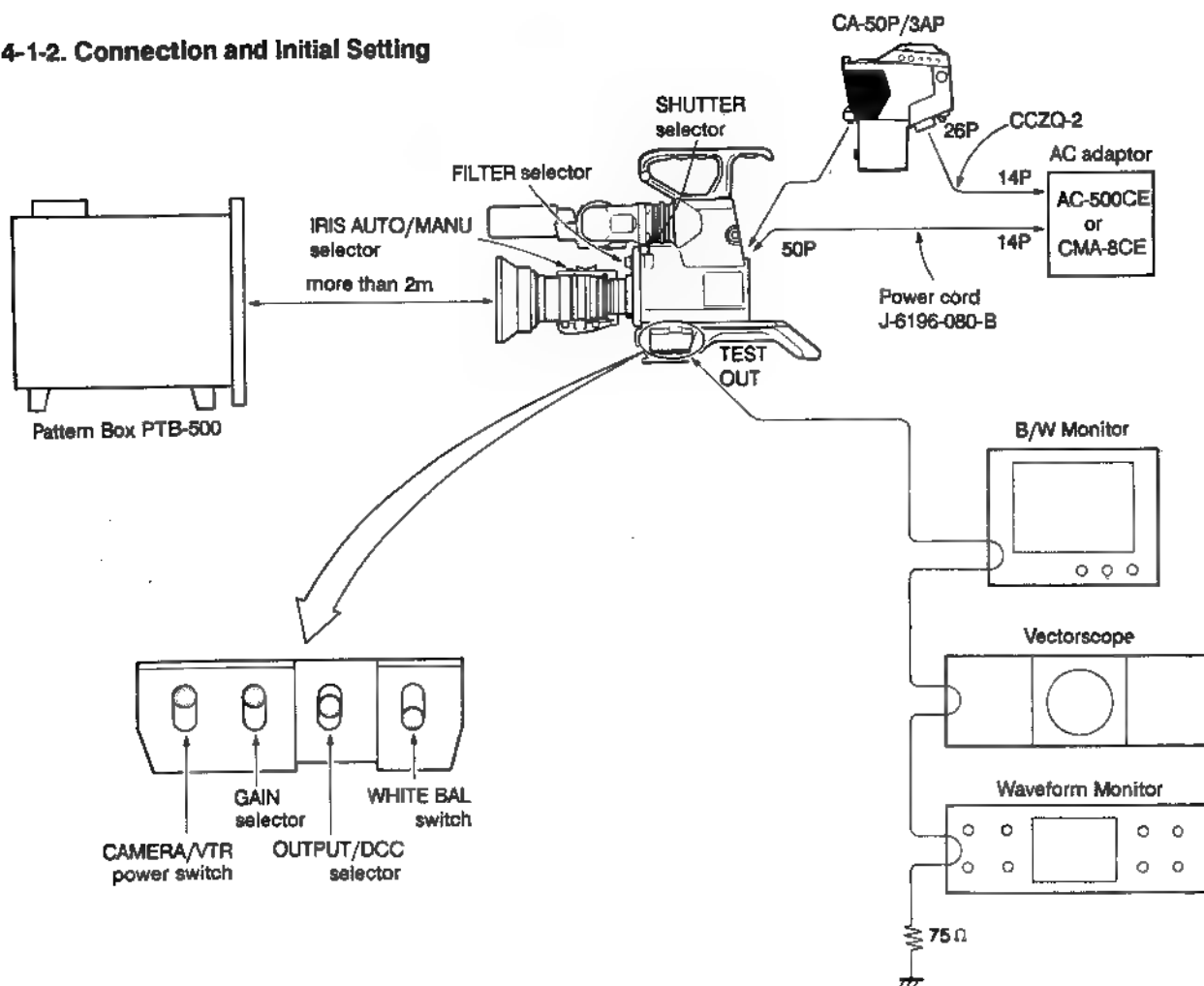
J-6196-080-B	DC Power Cord
Necessary without CA-50P/3AP	
	

- Camera Adaptor (Sony CA-50P/3AP)
- AC Adaptor (Sony AC-500CE or CMA-8CE)
- CF Pulse Generator (Sony BVG-10P)

Measuring Instruments

- Oscilloscope
- Waveform Monitor
- Vectorscope
- Frequency Counter
- Digital Voltmeter
- B/W Monitor (H. Resolution: more than 700 TV lines)

4-1-2. Connection and Initial Setting



1. Before adjustments, set the CAMERA/VTR power switch to "ON/STBY" position and warm up for ten minutes.
2. Reset the compensation data in the microprocessor.
(See 4-1-3. precautions of Adjustments)
3. Set the camera switches and controls as follows.

[Side panel]

CAMERA/VTR power switch	: ON/STBY
GAIN selector	: 0
OUTPUT/DCC selector	: CAM/OFF
WHITE/BAL switch	: PRESET
FILTER selector	: 1 (3200°K)
IRIS AUTO/MANU selector	: MANU
IRIS control	: CLOSE
SHUTTER switch	: OFF

[IE-24P Board]

S1 [DTL]	: OFF
S2 [APERTURE]	: OFF

[PR-121P Board]

S1 [MASKING]	: OFF
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Note: When adjusting the BVP-7000HSP, attach the following ND filter to the lens.

- ND8-105P-1; ND8-S-9 or equivalent
(CANON manufacture)
- ND8-EFL95 or equivalent
(FUJINON manufacture)
- ND8 or equivalent
(NIKON manufacture)

4-1-3. Precautions on Adjustments

* Boards Extension

When IE-24P, VA-77, PR-121P, EN-69P and SG-143P boards are extended or returned, be sure to set the CAMERA/VTR power switch to PRE HEAT/SAVE position. When PS-173 board is extended or returned, be sure to set the switch of original power supply to OFF position.

* Procedure of Resetting Compensation Data

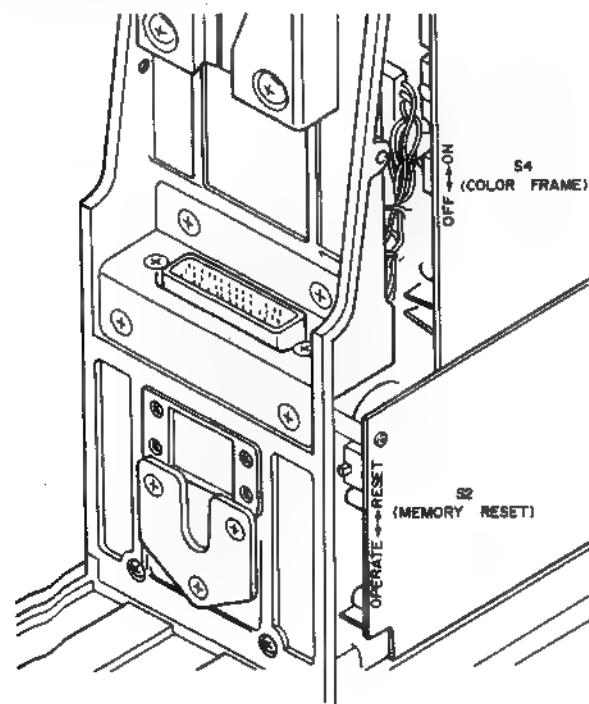
Before step 20. Black Set Pedestal Adjustment and step 21. Flare Adjustment are carried out, the compensation data in the microprocessor must be reset in following order.

1. S2 (MEMORY RESET)/AT-52A board → RESET
2. CAMERA/VTR power switch (side panel) → PRE HEAT/SAVE

Keep this switch position for ten seconds.

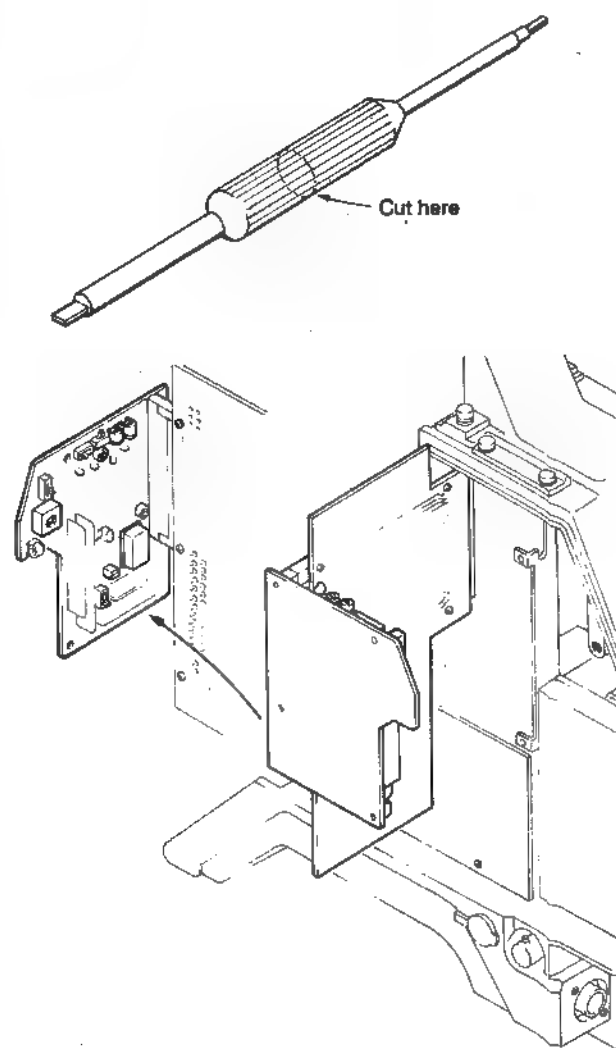
3. CAMERA/VTR power switch (side panel) → ON/STBY
 4. S2 (MEMORY RESET)/AT-52A board → OPERATE
- When the AUTO W/B BAL switch is not set to BLK or WHT position, the compensation data remains cleared (initial condition).

When the S2 (MEMORY RESET)/AT-52A board switch is set to RESET position, the compensation data is reset whenever the CAMERA/VTR power switch is set to OFF/SAVE position. Set the S2 switch to RESET position during adjustment.



* SG-143P board Adjustment

When step 4. SYNC Width Adjustment, step 7. H BLKG Adjustment and step 9. INT SC Phase Adjustment are carried out, a screw driver with short handle is available for adjustments.



* Partial Adjustment

When performing partial adjustment, refer to 4-3. PARTIAL ADJUSTMENT.

* Earthing Point

Use the GND terminal on the extension board, unless otherwise specified.

4-2. OVERALL ADJUSTMENT

Power supply system	Step 1. DC Bias Adjustment	Auto control system	Step 48. Power Save Adjustment
	Step 1-1. Switching Freq Adjustment		Step 49. Black Width Adjustment
	Step 2. +9.3V/+8.8 V Adjustment		Step 50. Auto iris Adjustment
	Step 3. Subcarrier Frequency Adjustment		Step 51. LOW VIDEO Adjustment
Synchronizing signal system	Step 4. SYNC Width Adjustment	Viewfinder system	Step 52. Character Size Adjustment
	Step 5. SYNC Phase Adjustment		Step 53. Preparation for Viewfinder System Adjustment
	Step 6. Burst Flag Adjustment		Step 54. Vertical Hold Adjustment
	Step 7. H BLKG Width Adjustment		Step 55. Horizontal Hold Adjustment
	Step 8. V BLKG Width Adjustment		Step 56. DC Balance Adjustment
	Step 9. INT SC Phase Adjustment		Step 57. BRIGHT SET Adjustment
	Step 10. DC Balance Adjustment		Step 58. Focus Adjustment
	Step 11. R/B Black Offset Adjustment		Step 59. Picture Frame Adjustment
	Step 12. VA Gain Adjustment		
	Step 13. Test Signal Waveform Adjustment		
	Step 14. Pre Knee Adjustment		
	Step 15. Modulator Balance Adjustment		
	Step 16. Black Shading Adjustment		
	Step 17. White Shading Adjustment		
	Step 18. PR IM Gain Adjustment		
Video signal system	Step 19. Flare DC Balance Adjustment		
	Step 20. Gamma Balance Adjustment		
	Step 21. Carrier Balance Adjustment		
	Step 22. Black Set • Pedestal Adjustment		
	Step 23. Flare Adjustment		
	Step 24. PR OUT Gain Adjustment		
	Step 25. RGB Video Level Adjustment		
	Step 26. EN Y Level Adjustment		
	Step 27. Color-bar Adjustment		
	Step 28. UV Gain Adjustment		
	Step 29. Burst Adjustment		
	Step 30. VTR Y Adjustment		
	Step 31. VTR R-Y Adjustment		
	Step 32. VTR B-Y Adjustment		
	Step 33. Zebra Level Adjustment		
	Step 34. Gamma Correction Adjustment		
	Step 35. Manual Knee White Clip Adjustment		
	Step 36. Automatic Knee Adjustment		
	Step 37. White Clip Adjustment		
	Step 38. V DTL Null Adjustment		
Detail signal system	Step 39. 1H, 2H DELAY Signal Phase Adjustment		
	Step 40. H DTL Adjustment		
	Step 41. Black Balance Adjustment		
	Step 42. Level Dependent Adjustment		
	Step 43. Aperture DTL Null Adjustment		
	Step 44. Aperture Waveform Adjustment		
	Step 45. H/V RATIO Adjustment		
	Step 46. Detail Level Adjustment		
	Step 47. Resolution Adjustment		

NOTE

Do not attempt to reset the following controls because their adjustments are very critical and delicate in the field.

RV2/TG-41P board	CV3/VA-77 board
RV3/TG-41P board	CV1/IE-24P board
RV4/TG-41P board	RV9/IE-24P board
RV1/DR-72 board	CV1/PR-121P board
RV2/DR-72 board	CV2/PR-121P board
RV3/DR-72 board	CV3/PR-121P board
CV1/VA-77 board	CV1/EN-69P board
CV2/VA-77 board	

Step 1. DC Bias Adjustment

■ Note

- The adjustment is not necessary if error is within $\pm 3\%$ of rated voltage.
- When performing this adjustment, be sure to readjust all of the following (to Step 60. Peaking level Adjustment).

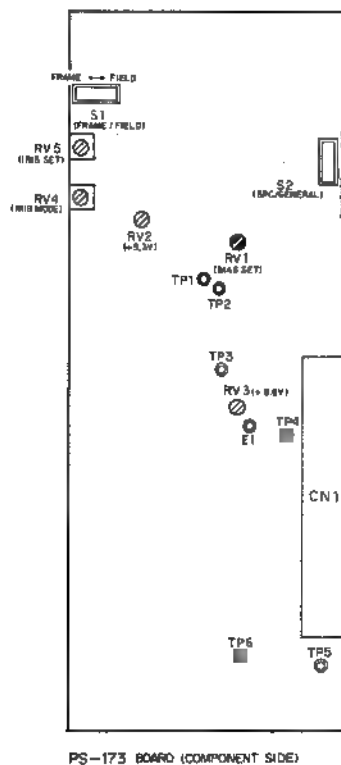
■ Setting

Equipment : Digital Voltmeter

To be extended : PS-173 board

■ Adjustment procedures

Test Point : TP1 (GND:TP2)/PS-173 board
 Adj. point : ● RV1 (BIAS SET)/PS-173 board
 Spec. : $+1.83 \pm 0.01$ Vdc



Step 1-1. Switching Freq Adjustment

■ Note

- The adjustment is not necessary if error is within $\pm 2\%$ of rated voltage.

■ Setting

Equipment : Frequency Counter

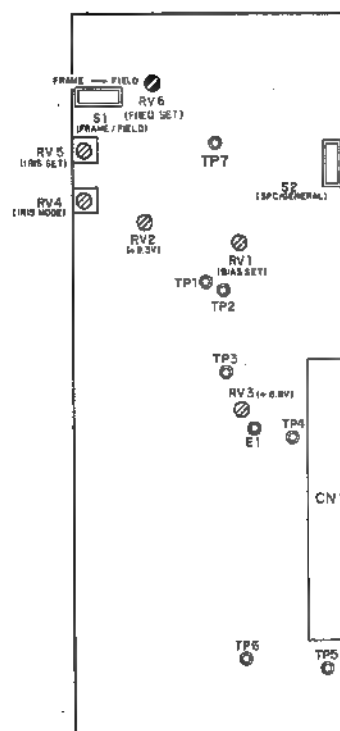
To be extended : PS-173 board

■ Adjustment procedures

Test Point : TP7 (GND: E1)/PS-173 board

Adj. Point : \odot RV6 (FREQ SET)/PS-173 board

Spec. : 40.4 ± 0.8 kHz



PS-173 BOARD (COMPONENT SIDE)

Step 2. +9.3V/+8.8V Adjustment

■ Note

- The adjustment is not necessary if error is within $\pm 3\%$ of rated voltage.
- When performing this adjustment, be sure to readjust all of the following (to Step 59. Picture Frame Adjustment.).

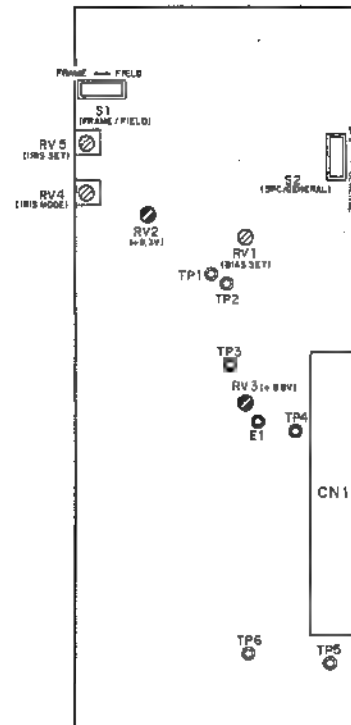
■ Setting

Equipment : Digital Voltmeter

To be extended : PS-173 board

■ Adjustment procedures

	Test point/PS-173	Adj. point/PS-173	Specification
+9.3V Adjustment	TP3 (GND: E1)	RV2	$+9.3 \pm 0.01$ Vdc
+8.8V Adjustment	TP4 (GND: E1)	RV3	$+8.8 \pm 0.01$ Vdc



PS-173 BOARD (COMPONENT SIDE)

Step 3. Subcarrier Frequency Adjustment

■ Note

- Before adjustment, set the CAMERA/VTR power switch to ON/STBY position and warm up for ten minutes.
- Make sure that the camera is not in GENLOCK mode.

■ Setting

Equipment : Frequency Counter

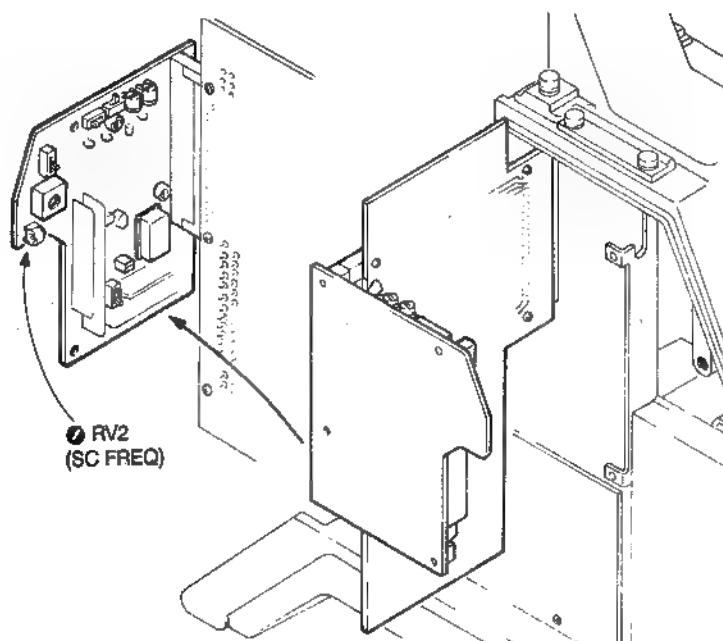
To be extended : SG-143P board

■ Adjustment procedures

Test point : TP26 (GND:TP25)/extension board

Adj. point : X1/SG-143P board

Spec. : $4,433,619 \pm 5$ Hz




4. ALIGNMENT

Equipment :	Waveform monitor (WFM)	To be extended :	SG-143P board
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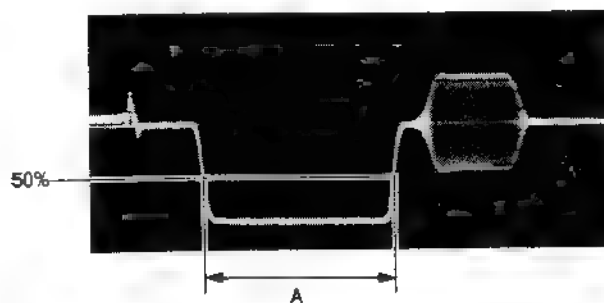
Equipment : Waveform monitor (WFM)

To be extended : SG-143P board

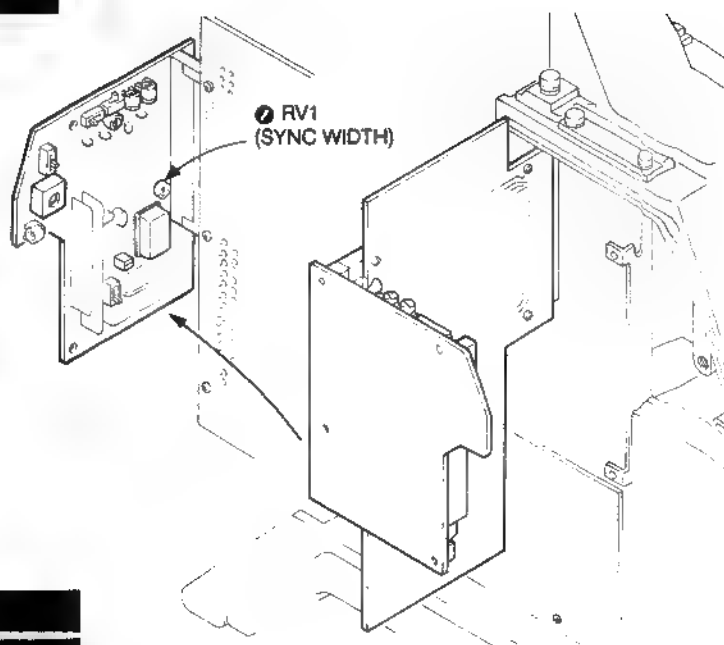
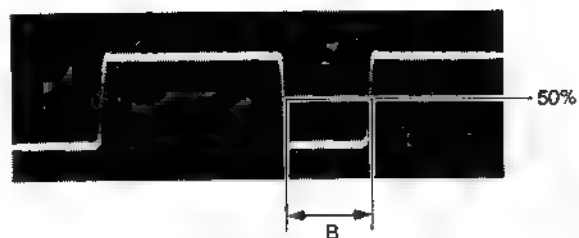
1. ENC/RGB switch (side panel) → "ENC"

1. ENC/RGB switch (side panel) → "ENC"
2. Test point: TEST OUT terminal
Adj. point:  RV1 (SYNC WIDTH)/SG-143P board
Spec. : A = $4.7 \pm 0.1 \mu\text{s}$
 B = $2.3 \pm 0.1 \mu\text{s}$

Spec. : $A = 4.7 \pm 0.1 \mu\text{s}$

$$B = 2.3 \pm 0.1 \mu\text{s}$$


V BLKG



Step. 5 SYNC Phase Adjustment

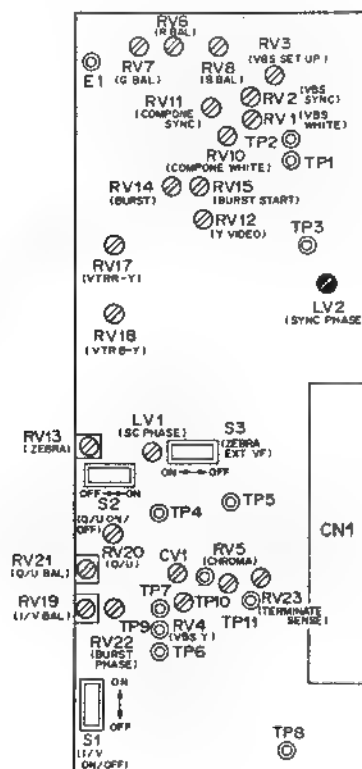
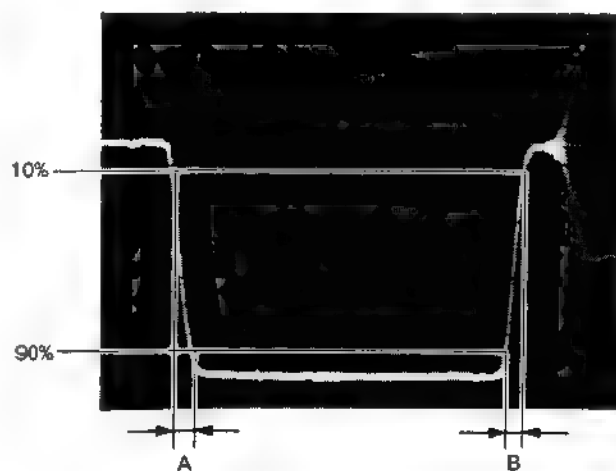
■ Setting

Equipment : Oscilloscope

To be extended : EN-69P board

■ Adjustment procedures

1. ENC/RGB switch (side panel) → "ENC"
2. Test point: TP9 (GND:TP11)/extension board
Adj. point: ● LV2 (SYNC PHASE)/EN-69P board
Spec. : $A = B = 0.25 \pm 0.05 \mu s$
(Adjust so as to disappear the overshoot and undershoot.)



EN-69/69P BOARD (COMPONENT SIDE)

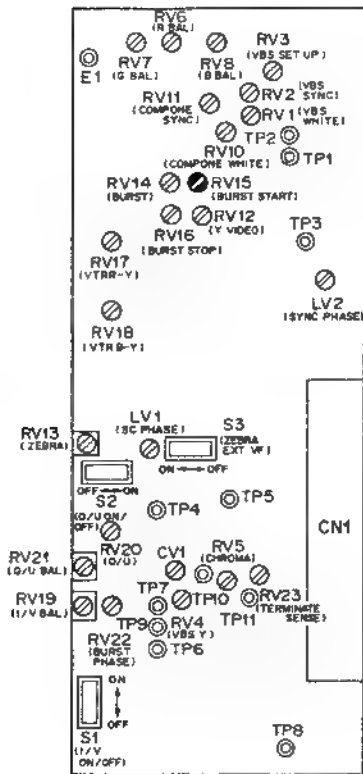
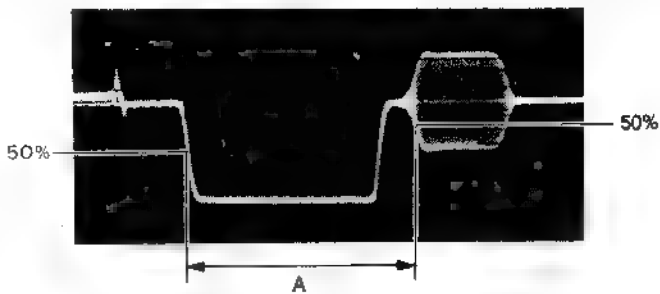
Step 6. Burst Flag Adjustment

■ Setting

Equipment : Waveform monitor (WFM)	To be extended : EN-69P board
------------------------------------	-------------------------------

■ Adjustment procedures

- ENC/RGB switch (side panel) → "ENC"
- Test point: TEST OUT terminal
Adj.point : ● RV15 (BURST START)/EN-69P board
Spec. : $A = 5.6 \pm 0.1 \mu s$



EN-69/69P BOARD (COMPONENT SIDE)

Step 7. H BLKG Width Adjustment

■ Setting

Equipment	: Waveform monitor (WFM)	To be extended	: SG-143P board
Object	: White window chart		

■ Preparation

1. Pattern box
 - When the pattern box is PTB-220, set AUTO/MANU switch at "AUTO".
 - When the pattern box is PTB-500, insert the filter unit.
2. Shoot so that the white window frame touches the underscanned picture frame on the monitor.
3. ENC/RGB switch (side panel) → "ENC"

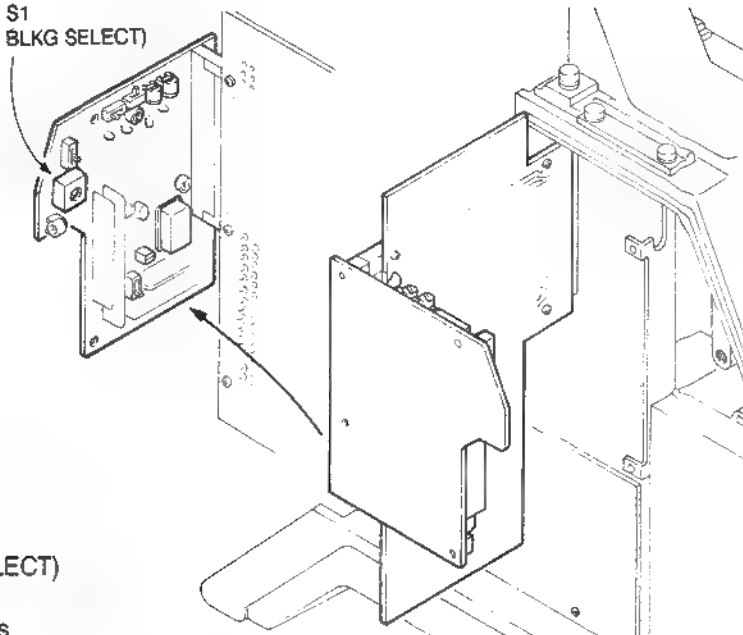
■ Adjustment procedures

Test point: TEST OUT terminal

Adjust : 1. Adjust the iris control so that the video level at TEST OUT terminal is $700 \pm 10 \text{ mV}$.

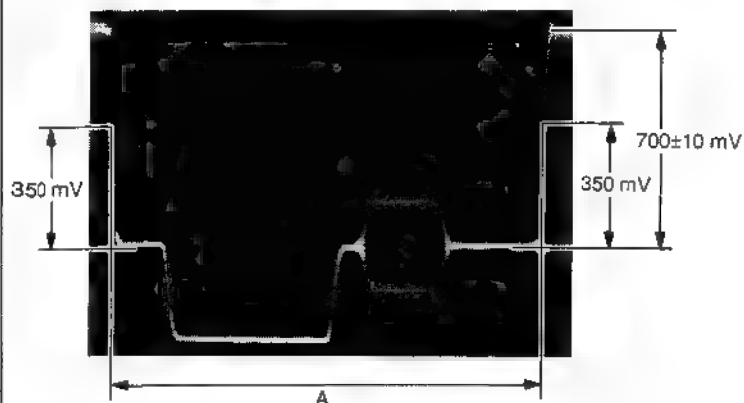


● S1
(H BLKG SELECT)



2. Adj. point: ● S1 (H BLKG SELECT)
/SG-143P board

Spec. : $A = 12.05 \pm 0.25 \mu\text{s}$

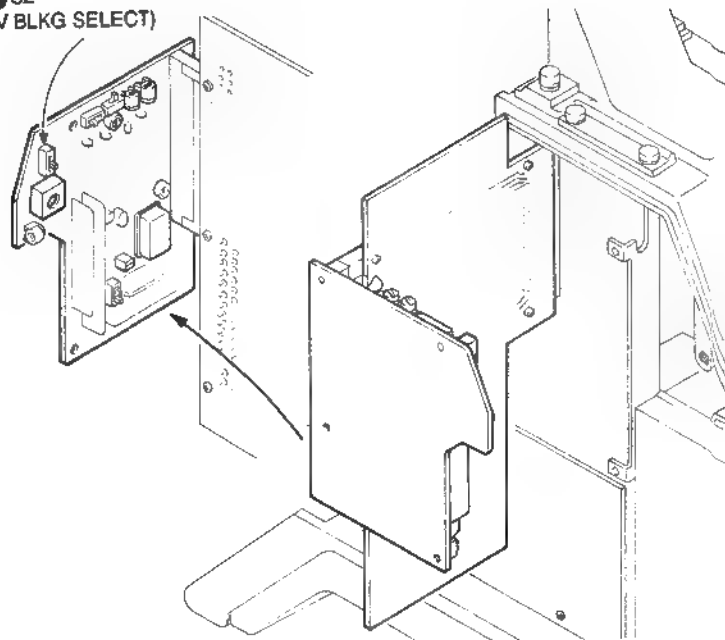


Step 8. V BLKG Width Adjustment

■ Adjustment procedures

Adj. point: S2 (V BLKG SELECT)/SG-143P board
Adjust : The V BLKG width can be selected to
23H, 24H and 25H, respectively, by
S2/SG-143P board.
Usually, set to 24H (center position).

● S2
(V BLKG SELECT)



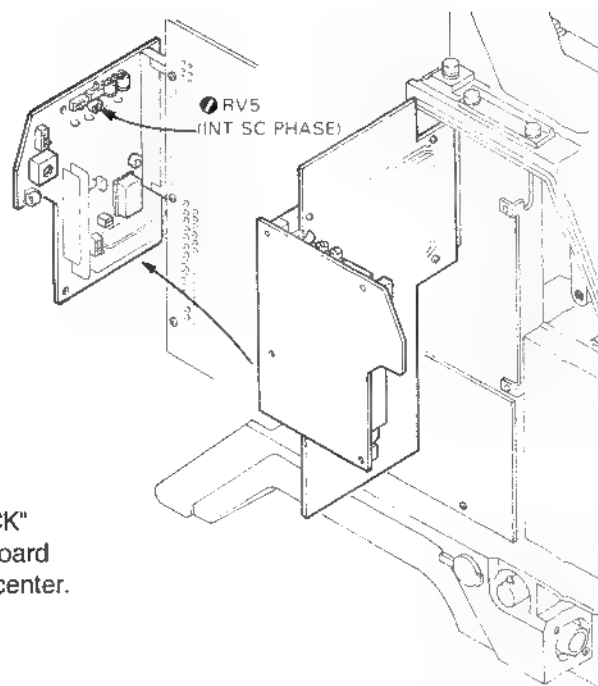
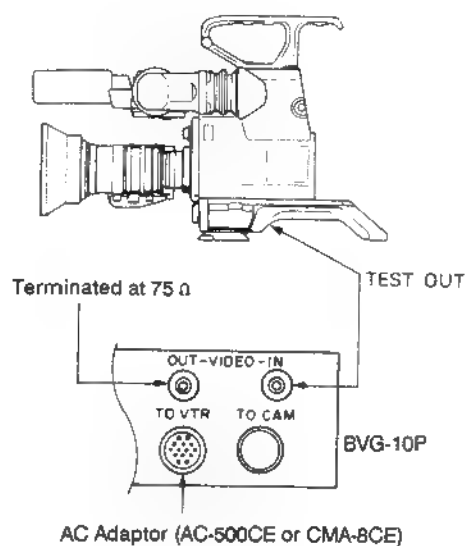
Step 9. INT SC Phase Adjustment

■ Setting

Equipment : CF Pulse Generator	To be extended : SG-143P board
--------------------------------	--------------------------------

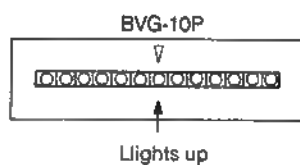
■ Adjustment procedures

(This step describes how to adjust the INT SC Phase using the CF pulse generator (Sony BVG-10P).
If any equipment except BVG-10P is used, you should refer to procedures below for your information.)



Preparation : Selector of BVG-10P → "SOURCE CHECK"

Adjustment : Adjust ● RV5 (INT SC PHASE)/SG-143P board
so that the LED lamp of BVG-10P lights at center.



Step 10. DC Balance Adjustment

■ Setting

Equipment	: Digital Voltmeter	To be extended	: VA-77 board
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■ Preparation

Lens iris → Close "C"

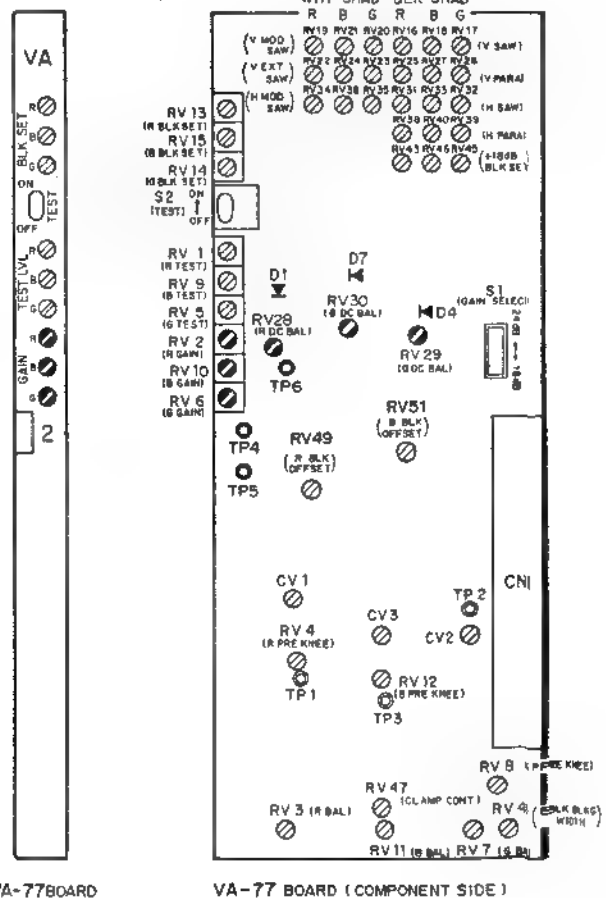
S2 **TEST** /VA-77 board → "OFF"

- RV6 **G GAIN** /VA-77 board → Mechanical center
- RV2 **R GAIN** /VA-77 board → Mechanical center
- RV10 **B GAIN** /VA-77 board → Mechanical center

■ Adjustment procedures

Adjust every channel as shown below.

	Test point/ VA-77 board	Adj. point/ VA-77 board	Specification
G-ch	the cathode of D4 or TP5	● RV29	$+1.2 \pm 0.1$ Vdc
B-ch	the cathode of D7 or TP6	● RV30	$+1.2 \pm 0.1$ Vdc
R-ch	the cathode of D1 or TP4	● RV28	$+1.2 \pm 0.1$ Vdc



■ Note

After this adjustment is completed, be sure to carry out step 12. VA Gain Adjustment.

Step 11. R/B Black Offset Adjustment

■ Setting

Equipment : Osilloscope	Trigger : HD (TP25/extension board)
To be extended : VA-77 board	

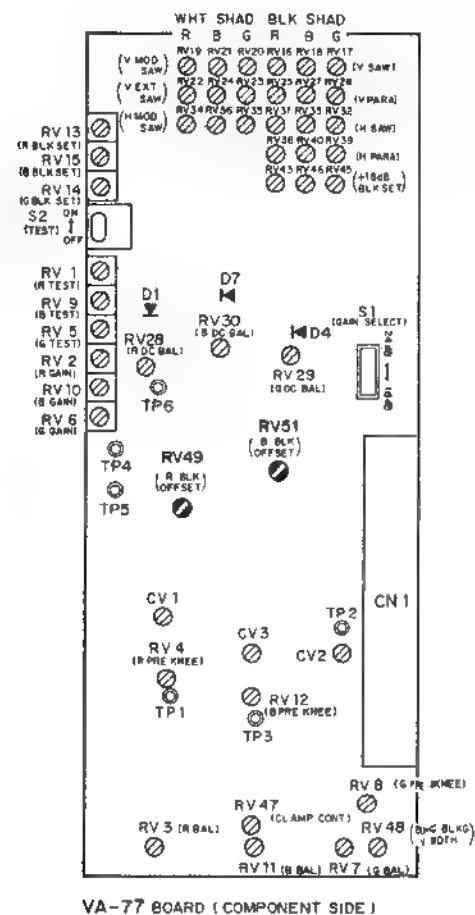
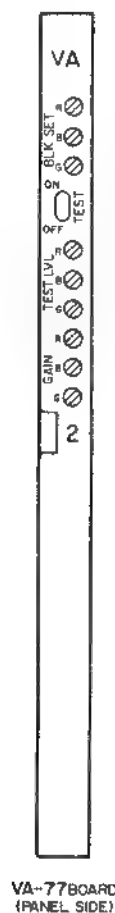
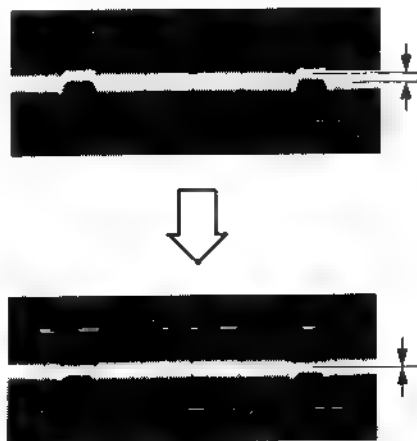
■ Preparation

Lens iris	→ Close "C"
OUTPUT/DCC Switch (side panel)	→ "CAM/OFF"
S2 TEST /VA-77 board	→ "OFF"

■ Adjustment procedures

Adjust every channel as shown below.

	Test Point/VA-77 board	Adj. point/VA-77 board
R-ch	TP1	RV49
B-ch	TP3	RV51



Step 12. VA Gain Adjustment

■ Note

- Be sure to complete step 10. DC Balance Adjustment, or this adjustment will become invalid.
- Use a white pattern chart for this adjustment. Adjust the lighting so that the white area is exactly 3200°K of color temperature.
- When the pattern box is used, well maintained pattern box should be used.

■ Setting

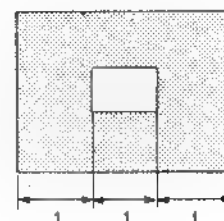
Equipment	: Oscilloscope	Trigger	: HD (TP25/extension board)
Object	: White window chart	To be extended	: VA-77 board

■ Adjustment procedures

- Adjust the zoom control and shoot the white window chart as shown right.
GAIN switch (side panel) → "0"
- Test point: TP34(GND:TP33)/extension board
Adj. point : Lens iris
Spec. : $A = 0.155 \pm 0.01$ Vp-p



Monitor screen

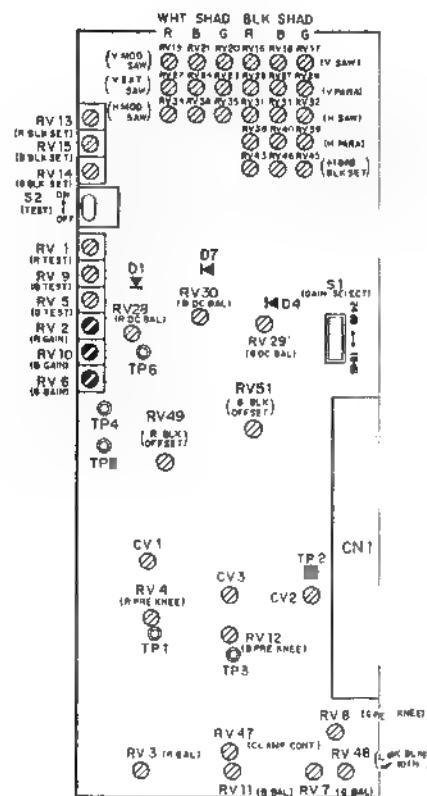


- Adjust every channel as shown below.

	Test point/ extension board	Adj. point/ VA-77 board	Specification
G-ch	TP9	RV6	$B = 0.5 \pm 0.01$ Vp-p
B-ch	TP5	RV10	$B = 0.5 \pm 0.01$ Vp-p
R-ch	TP7	RV2	$B = 0.5 \pm 0.01$ Vp-p



VA-77BOARD
(PANEL SIDE)



VA-77 BOARD (COMPONENT SIDE)

Step 13. Test Signal Waveform Adjustment

■ Note

Be sure to complete step 12. VA Gain Adjustment, or this adjustment will become invalid.

■ Setting

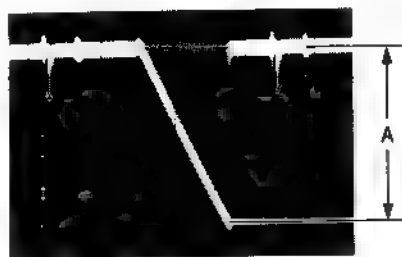
Equipment : Oscilloscope
To be extended : VA-77 board

Trigger : HD (TP25/extension board)

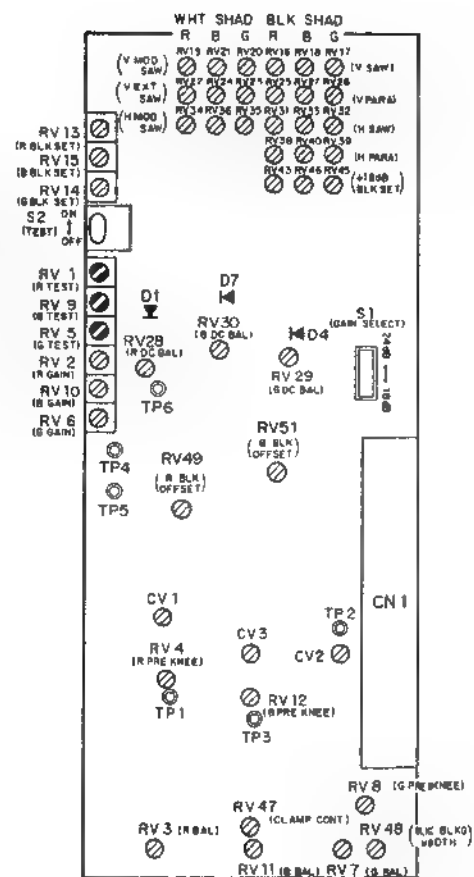
■ Adjustment procedures

1. S2 **TEST** /VA-77 board → "ON"
2. Adjust every channel as shown below.

	Test point/ extension board	Adj. point/ VA-77 board	Specification
G-ch	TP9	RV5	$A = 0.5 \pm 0.01$ Vp-p
B-ch	TP5	RV9	$A = 0.5 \pm 0.01$ Vp-p
R-ch	TP7	RV1	$A = 0.5 \pm 0.01$ Vp-p



VA-77 BOARD
(PANEL SIDE)



VA-77 BOARD (COMPONENT SIDE)

■ Note

After this adjustment is completed, set S2 **TEST** /VA-77 board at "OFF".

Step 14. Pre Knee Adjustment

■ Setting

Equipment : Oscilloscope	Trigger : HD (TP25/extension board)
To be extended : VA-77 board	

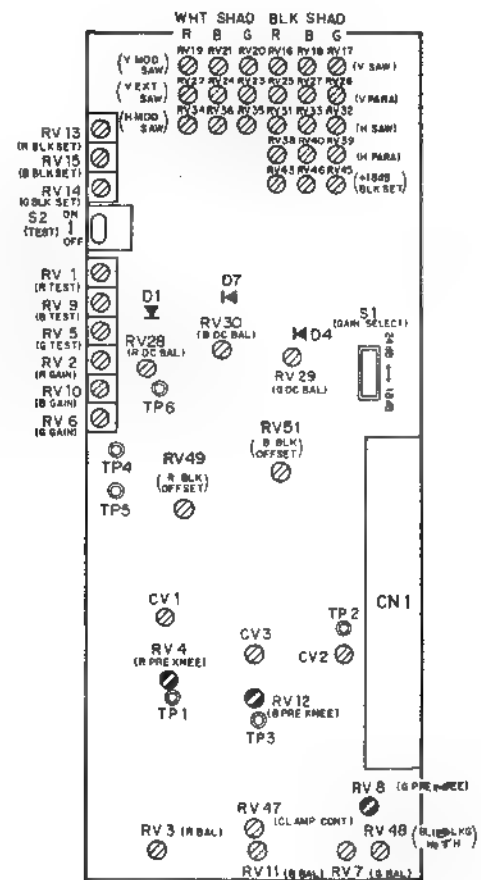
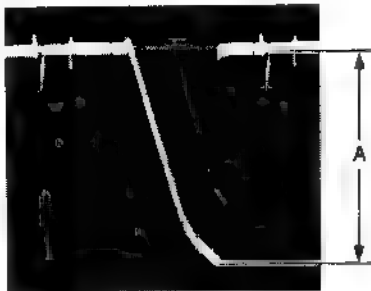
■ Preparation

S1 (GAIN SELECT)/VA-77 board	→ "+18dB"
S2 [TEST]/VA-77 board	→ "ON"
GAIN switch/side panel	→ "18"

■ Adjustment procedures

Adjust every channel as shown below.

	Test point/ extension board	Adj. point/ VA-77 board	Specification
G-ch	TP9	RV8	$A = 1.65 \pm 0.02 \text{ V}$
B-ch	TP5	RV12	$A = 1.65 \pm 0.02 \text{ V}$
R-ch	TP7	RV4	$A = 1.65 \pm 0.02 \text{ V}$



VA-77 BOARD (COMPONENT SIDE)

■ Note

After this adjustment is completed, set the GAIN selector (side panel) to "0" and S2 [TEST]/VA-77 board to "OFF".

Step 15. Modulator Balance Adjustment

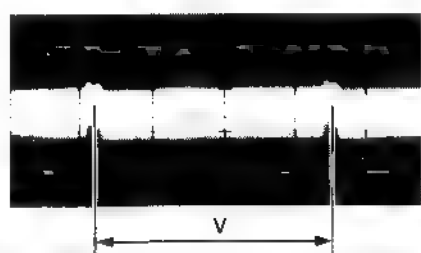
■ Setting

Equipment	: Oscilloscope	To be extended	: VA-77 board
Lens iris	: Close "C"	Trigger	: VD(TP26/extension board)

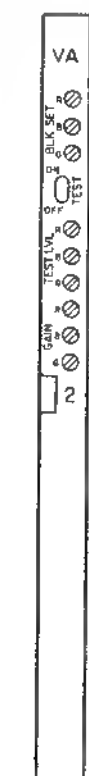
■ Adjustment procedures

Adjust every channel as shown below.

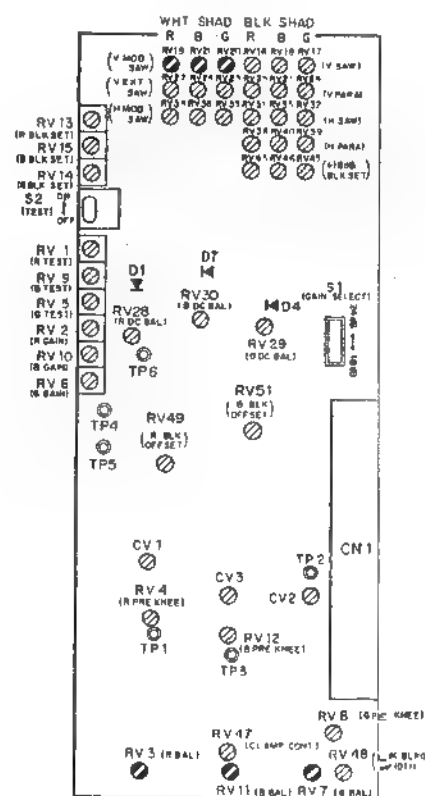
	Test point/ extension board	Adj. point/ VA-77 board	Specification
G-ch	TP9	RV7	The waveform does not change even if RV20/VA-77 board is turned both clockwise and counterclockwise.
B-ch	TP5	RV11	The waveform does not change even if RV21/VA-77 board is turned both clockwise and counterclockwise.
R-ch	TP7	RV3	The waveform does not change even if RV19/VA-77 board is turned both clockwise and counterclockwise.



Not to be changed



VA-77 BOARD
(PANEL SIDE)



VA-77 BOARD (COMPONENT SIDE)

■ Note

After this adjustment is completed, be sure to carry out step 17. White Shading Adjustment.

Step 16. Black Shading Adjustment

■ Setting



Equipment	: Waveform monitor (LUM mode)	To be extended : VA-77 board
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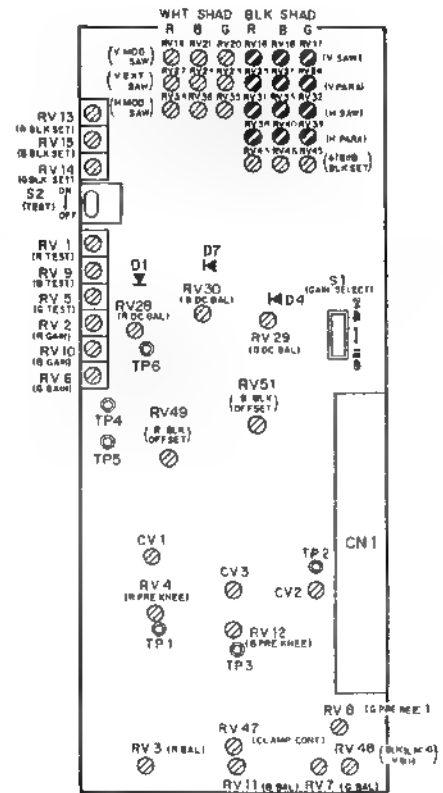
■ Preparation

1. Lins iris → Close "C"
Gain switch (side panel) → "18"
ENC/RGB switch (side panel) → "RGB"
S2 **TEST** /VA-77 board → "OFF"
2. Adjust the PEDESTAL control (side panel) so that the pedestal level is approx. 70 mV.

■ Adjustment procedures

Adjust every channel as shown below.

	Switches Setting (side panel)	Adjusting Poing/VA-77 board			
		H SAW	V SAW	H PARA	H PARA
G	G/OFF → G R/OFF/B → OFF	RV32	RV17	RV39	RV26
R	G/OFF → OFF R/OFF/B → R	RV31	RV16	RV38	RV25
B	G/OFF → OFF R/OFF/B → B	RV33	RV18	RV40	RV27
TEST OUT terminal					



VA-77 BOARD (COMPONENT SIDE)

■ Note

After this adjustment is completed, set the GAIN selector (side panel) at "0" and the PEDESTAL control (side panel) at mechanical center.

Step 17. White Shading Adjustment

■ Note

- Be sure to complete step 15. Modulator Balance Adjustment, or this adjustment will affect the black shading adjustment.
- When using the lens with the EXTENDER attached, carry out the V EXT SAW adjustment. Before this adjustment, set the EXT lever of lens at X2 position and adjust the iris control so that the video level at TEST OUT terminal is 700 ± 10 mV. After this adjustment is completed, set the EXT lever at X1 position.

■ Setting

Equipment : Waveform monitor (WFM)
Object : White window chart

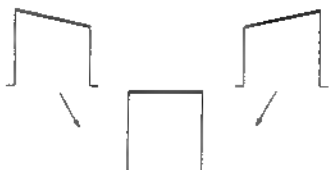
To be extended : VA-77 board

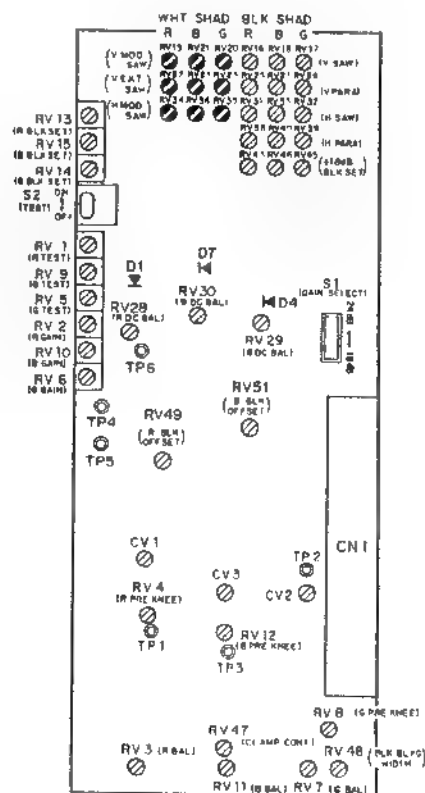
■ Preparation

- ENC/RGB switch (side panel) → "RGB"
S4 (WHT CLIP)/PR-121P board → "OFF"
- Set the zoom control at TELE and shoot the white area of white window chart.
- Adjust the iris control so that the video level at the TEST OUT terminal is 700 ± 10 mV.

■ Adjustment procedures

Adjust every channel as shown below.

	Switches Setting (side panel)	Adjusting Point/VA-77 board		
		H SAW	V SAW	H PARA
G	G/OFF → G R/OFF/B → OFF	RV35	RV20	RV23
R	G/OFF → OFF R/OFF/B → R	RV34	RV19	RV22
B	G/OFF → OFF R/OFF/B → ■	RV36	RV21	RV24
TEST OUT terminal				



VA-77 BOARD (COMPONENT SIDE)

Note : After this adjustment is completed, set the S4 (WHT CLIP)/PR-121P board at "ON".

Step 18. PR IN Gain Adjustment

■ Note

Be sure to complete step 13. Test Signal Waveform Adjustment.

■ Setting

Equipment : Oscilloscope
To be extended : PR-121P board

Trigger : CP (TP35/extension board)

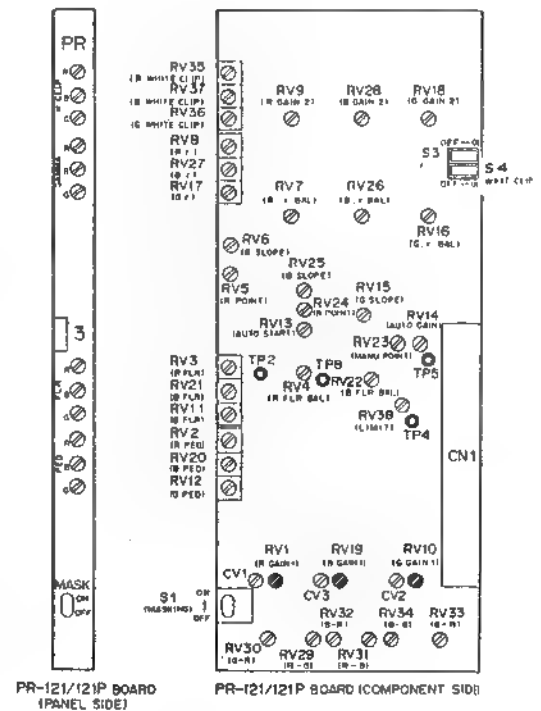
■ Preparation

OUTPUT/DCC Switch (Side Panel) → "CAM/OFF"
GAIN Switch (Side Panel) → "0"
S2 **TEST** /VA-77 board → "ON"

■ Adjustment procedures

Adjust every channel as shown below.

	Test point/ PR-121P board	Adj. point/ PR-121P board	Specification
G-ch	TP4	RV10	$A = 2.2 \pm 0.1 \text{ V}$
B-ch	TP8	RV19	$A = 2.2 \pm 0.1 \text{ V}$
R-ch	TP2	RV1	$A = 2.2 \pm 0.1 \text{ V}$



■ Note

After this adjustment is completed, set the S2 **TEST** /VA-77 board at "OFF".

Step 19. Flare DC Balance Adjustment

■ Setting

Equipment : Oscilloscope	Trigger : CP (TP35/extension board)
To be extended : PR-121P board	

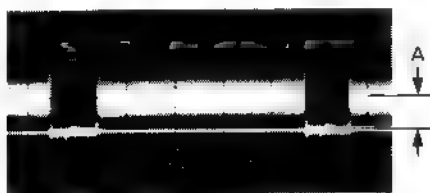
■ Preparation

Lens Iris	→ Close "C"
S2 TEST /VA-77 board	→ "OFF"
S3 ON/OFF /PR-121P board	→ "ON"

■ Adjustment procedures

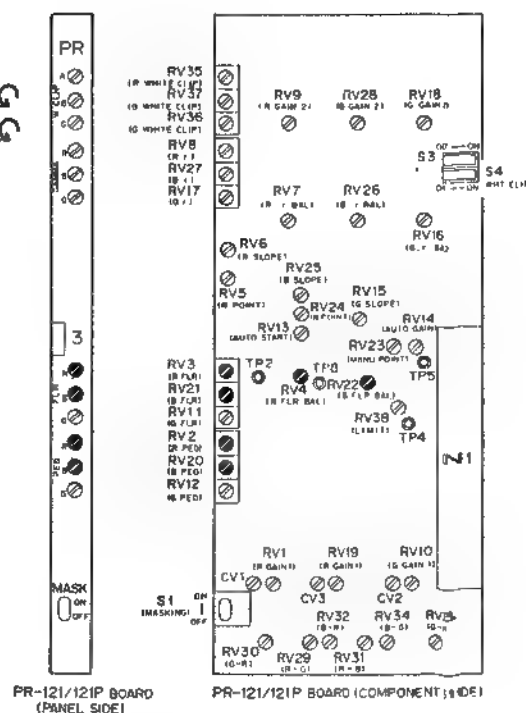
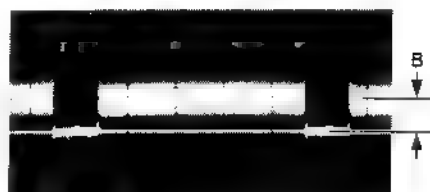
1. ⚙ RV3 **R FLR** /PR-121P board → fully clockwise ⤴
 ⚙ RV21 **B FLR** /PR-121P board → fully clockwise ⤴
2. Carry out R-channel adjustment and B-channel adjustment as shown below.

	Test point/ Extension board	Adj. point/ PR-121P board	Specification
R-ch	TP18	⚙ RV2	A = 30 ± 5 mV
B-ch	TP16	⚙ RV20	A = 30 ± 5 mV



3. ⚙ RV3 **R FLR** /PR-121P board → fully counter clockwise ⤵
 ⚙ RV21 **B FLR** /PR-121P board → fully counter clockwise ⤵
4. Carry out R-channel adjustment and B-channel adjustment as shown below.

	Test point/ Extension board	Adj. point/ PR-121P board	Specification
R-ch	TP18	⚙ RV4	B = 30 ± 5 mV
B-ch	TP16	⚙ RV22	B = 30 ± 5 mV



■ Note

After this adjustment is completed, be sure to carry out Step 22. Black set-Pedestal Adjustment and Step 23. Flare Adjustment.

Step 20. Gamma Balance Adjustment

■ Note

Be sure to complete step 13. Test Signal Waveform Adjustment, or this adjustment will become invalid.

■ Setting

Equipment : Oscilloscope
To be extended : PR-121P board

Trigger : CP (TP35/extension board)

■ Adjustment procedures

1. S2 **TEST** /VA-77 board → "ON"
S4 (WHT CLIP)/PR-121P board → "OFF"
2. Adjust every channel as shown below.

	Test point/ extension board	Adj. point/ PR-121P board	Specification
G-ch	TP17	RV16	The peak level of waveform does not change even if the S3 (γ ON/OFF)/PR-121P board is set to ON or OFF.
B-ch	TP16	RV26	
R-ch	TP18	RV7	

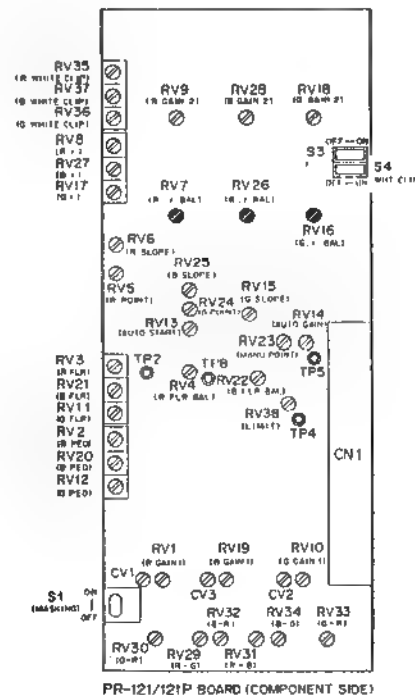
γ: ON



γ: OFF



A = B



■ Note

After this adjustment is completed, set the switches as follows.

- S4 (WHT CLIP)/PR-121P board → "ON"
S2 **TEST** /VA-77 board → "OFF"
S3 (γ ON/OFF)/PR-121P board → "ON"

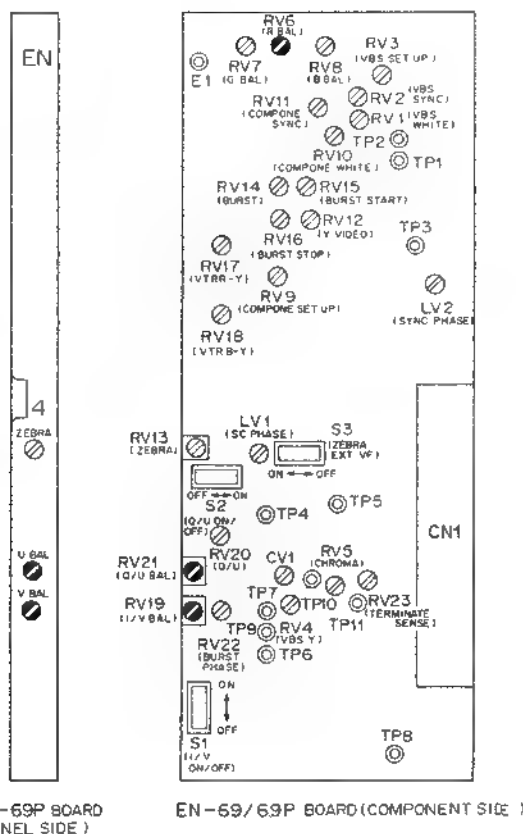
Step 21. Carrier Balance Adjustment

■ Setting

Equipment : Vectorscope (MAX Gain)

■ Adjustment procedures

1. OUTPUT/DCC switch (side panel)
→ "BARS/OFF"
ENC/RGB switch (side panel) → "ENC"
2. Adjust \odot RV19 [V BAL] and \odot RV21 [U BAL]
/EN-69P board so as to center the black beam
spot on the vectorscope.



Note: When back spots cannot be discriminated due to several beam spots, turn the \odot RV6/ EN-69P board. The black beam spots cannot be shifted. In this case, after adjustment is completed, perform step 27. Color Bar Adjustment.

Step 22. Black Set · Pedestal Adjustment

- **Note**

Be sure to reset the compensation data in the microprocessor, or this adjustment will become invalid.
(See 4-1-3. Precautions on Adjustments)

- **Setting**


Equipment : Waveform monitor, Vectorscope (MAX Gain)

To be extended : VA-77 board

- **Preparation**

1. Lens iris → Close "C"
ENC/RGB switch (side panel) → "RGB"
G/OFF switch (side panel) → "G"
R/OFF/B switch (side panel) → "OFF"
2. Adjust the PEDESTAL control (side panel) so that the pedestal level is approx. 70 mV.

- Adjustment procedures

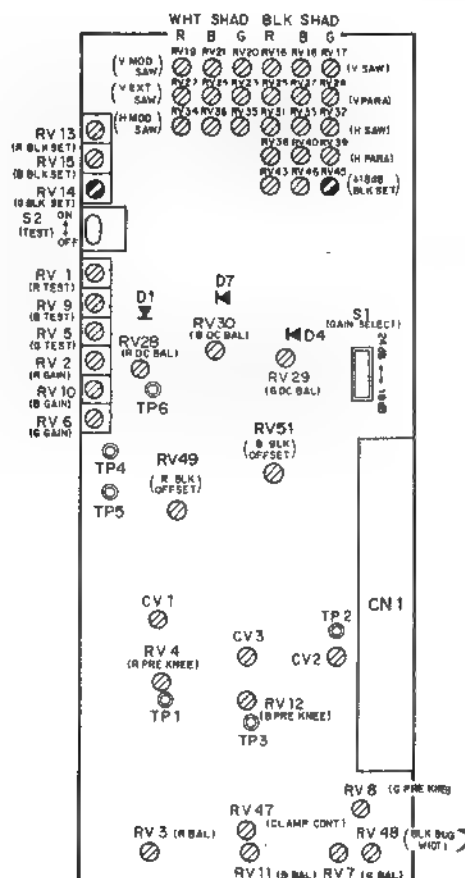
1. Test Point : TEST OUT terminal
Adj. point :  RV14 (G BLK SET)/VA-77 board
Spec. : The pedestal level does not change even if the GAIN selector is set to "0" or "9".



↑ Not to be changed



VA-77BOARD
(PANEL SIDE)

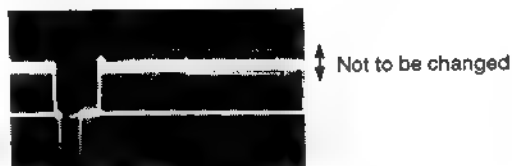


VA-77 BOARD (COMPONENT SIDE)



(Proceed to next page.)

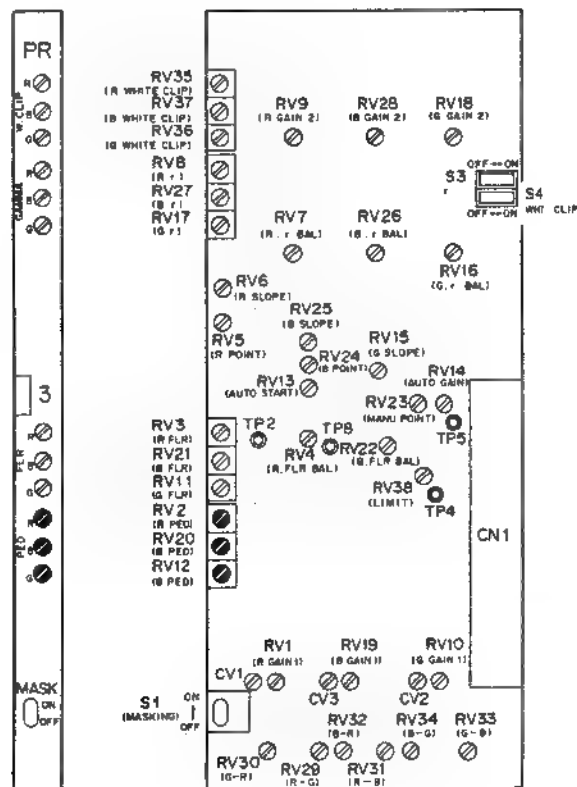
2. Test point : TEST OUT terminal
 Adj. point : ● RV45/VA-77 board
 Spec. : The pedestal level does not change even if the GAIN selector is set to "0" or "18".



3. ■ Adjust PEDESTAL control (side panel) so that the DC level at TP6 on extension board is 2.5 ± 0.1 Vdc.
 ■ GAIN selector (side panel) → "0"
 4. Test point : TEST OUT terminal
 Adj. point : ● RV12/PR-121P board
 Spec. : $A = 20 \pm 5$ mV



5. ENC/RGB switch (side panel) → "ENC"



PR-121/121P BOARD
(PANEL SIDE)

PR-121/121P BOARD (COMPONENT SIDE)



(Proceed to next page)

6. Test point : TEST OUT terminal
 Adj. point : ● RV2, ● RV20/PR121P board
 Spec. : The beam spot should be positioned in the center of the vectorscope screen.



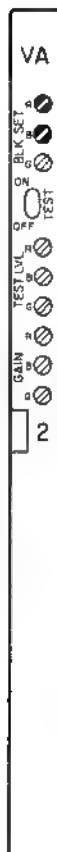
7. GAIN selector (side panel) → "9"
 8. Test point : TEST OUT terminal
 Adj. point : ● RV13, ● RV15/VA-77 board
 Spec. : The beam spot should be positioned in the center of the vectorscope screen.



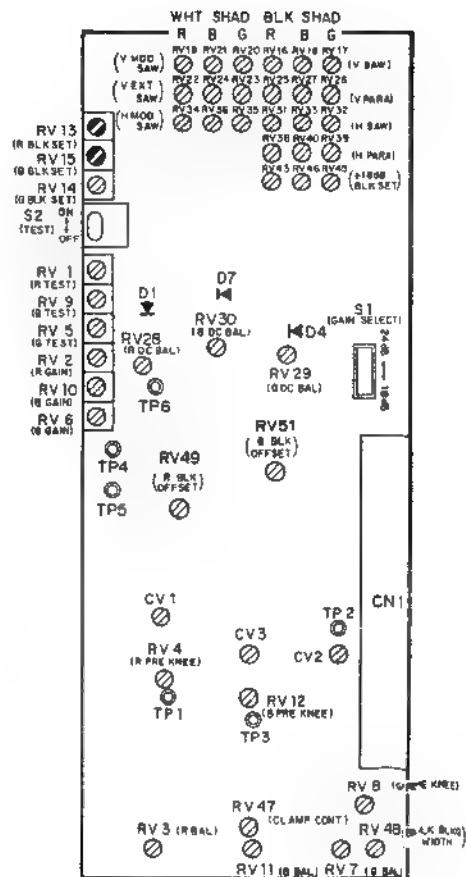
9. GAIN selector (side panel) → "18"



(Proceed to next page)

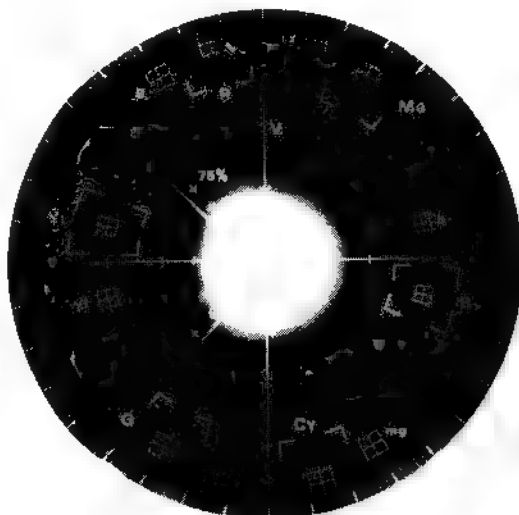


VA-77 BOARD
(PANEL SIDE)



VA-77 BOARD (COMPONENT SIDE)

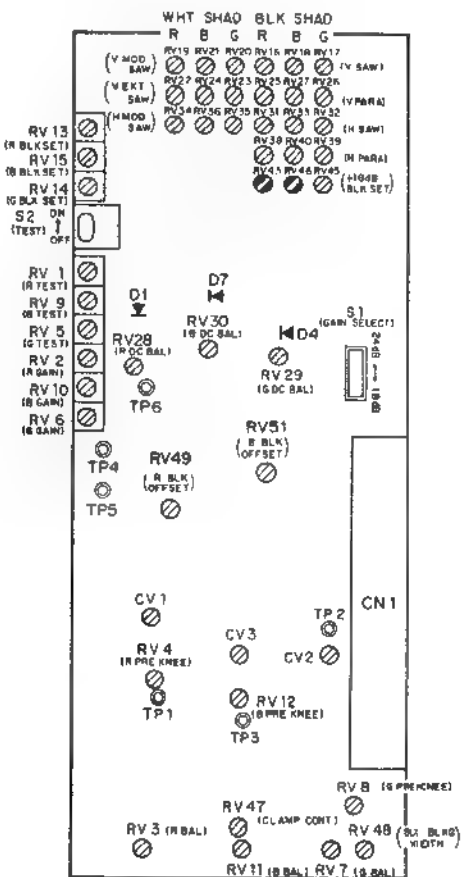
10. Test point : TEST OUT terminal
 Adj. point : ● RV43, ● RV46/VA-77 board
 Spec. : The beam spot should be positioned in the center of the vectorscope screen.



11. Repeat item 6 to 10 so as to center the beam spot on the vectorscope, even if the GAIN selector (side panel) is set to "0", "9" or "18".



VA-77 BOARD
(PANEL SIDE)



VA-77 BOARD (COMPONENT SIDE)

■ Note

After this adjustment is completed, set the GAIN selector (side panel) to "0".

Step 23. Flare Adjustment

■ Note

Repeat carrying out this adjustment after step 22. Black Set · Pedestal Adjustment is carried out three or four times.

■ Setting

Object : Grayscale chart

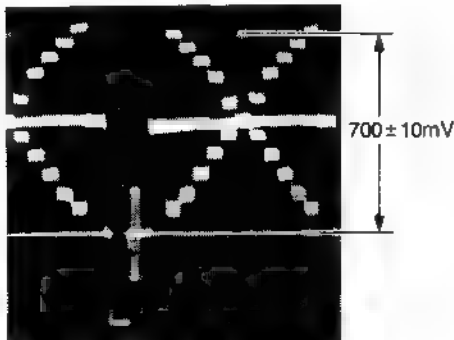
Equipment : Waveform monitor

■ Preparation

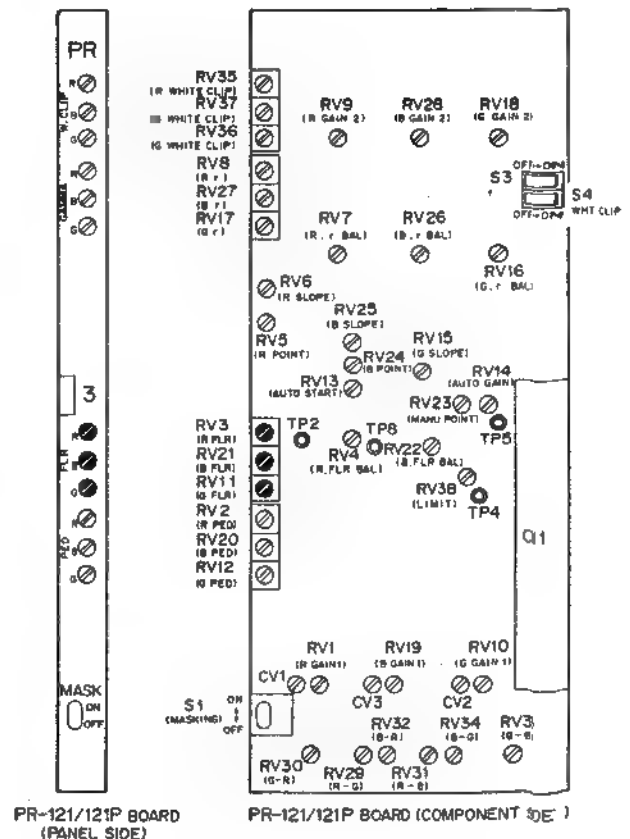
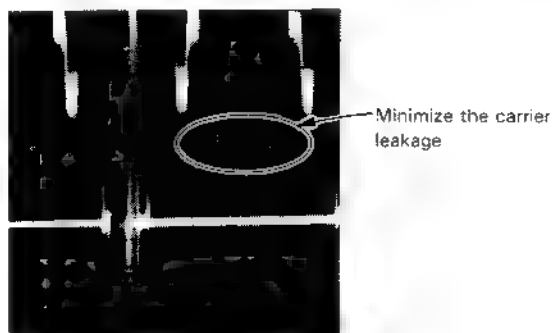
- ENC/RGB switch (side panel) → "ENC"
 ● RV11 **G FLR** /PR-121P board → fully counterclockwise
- As shown right, stick non-reflective and non-photo conductive cloth (Such as velvet) as ■ reference of the black level.

■ Adjustment procedures

- Adjust the zoom control so that the grayscale chart frame touches the underscanned picture frame on the monitor screen.
- Test point : TEST OUT terminal
 Adj. point : Lens iris
 Spec. : $700 \pm 10 \text{ mV}$



- Open the iris control 1 more stop than F value of item 2.
- Test point : TEST OUT terminal
 Adj. point : ● RV3, ● RV21/PR-121P board
 Spec. : The carrier leakage of black level should be minimized.



Step 24. PR OUT Gain Adjustment

■ Note

Be sure to complete step 20. Gamma Balance Adjustment, or this adjustment will become invalid.

■ Setting

Equipment	: Oscilloscope, Waveform monitor	Trigger:	HD(TP25/extension board)
To be extended	: EN-69P board		

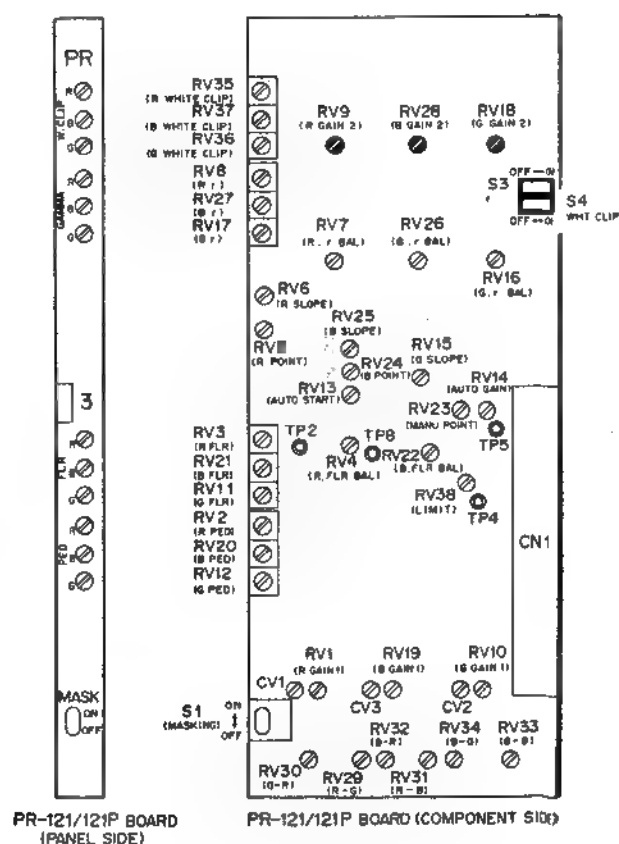
■ Preparation

S2 **TEST** /VA-77 board → "ON"
 S3 (γ ON/OFF)/PR-121P board → "ON"
 S4 (WHT CLIP)/PR-121P board → "OFF"

■ Adjustment procedures

Adjust every channel as shown below.

	Test point extension board	Adj. point/ PR-121P board	Specification
G-ch	TP17	RV18	$A = 0.7 \pm 0.02 \text{ Vp-p}$
B-ch	TP16	RV28	$A = 0.7 \pm 0.02 \text{ Vp-p}$
R-ch	TP18	RV 9	$A = 0.7 \pm 0.02 \text{ Vp-p}$



■ Note

After this adjustment is completed, set the S2 **TEST** switch/VA-77 board to "OFF" and the S4 (WHT CLIP)/PR-121P board to "ON".

Step 25. RGB Video Level Adjustment

■ Note

Be sure to complete step 24. PR OUT Gain Adjustment, or this adjustment will become invalid.

■ Setting

Equipment : Waveform monitor (WFM)

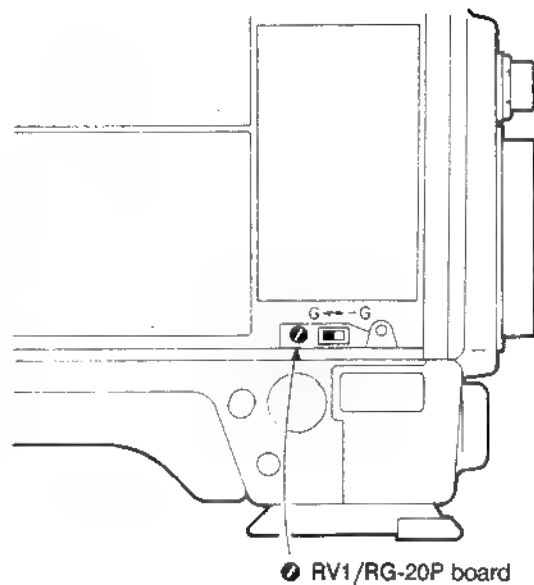
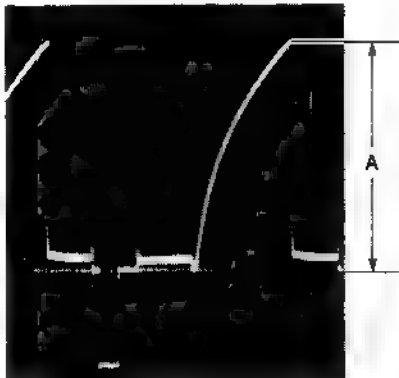
■ Preparation

ENC/RGB switch (side panel) → "RGB"
 G/OFF switch (side panel) → "G"
 R/OFF/B switch (side panel) → "OFF"

S2 **TEST** /VA-77 board → "ON"
 S4 (WHT CLIP)/PR-121P board → "OFF"

■ Adjustment procedures

Test point : TEST OUT terminal
 Adj. point : ⚙ RV1/RG-20 board
 Spec. : $A = 700 \pm 10 \text{ mV}$



■ Note

After this adjustment is completed, set the S2 **TEST** /VA-77 board to "OFF" and S4 (WHT CLIP)/PR-121P board to "ON".

Step 26. EN Y Level Adjustment

■ Note

Be sure to complete step 25. RGB Video Level Adjustment, or this adjustment will become invalid.

■ Setting

Equipment : Waveform monitor (WFM)

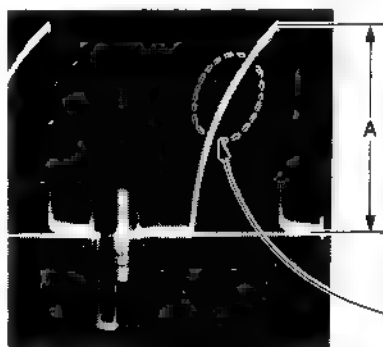
To be extended : EN-69 board

■ Preparation

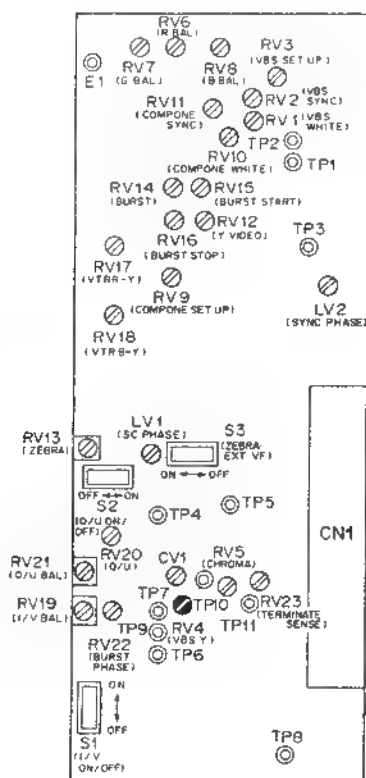
OUTPUT/DCC switch (side panel) → "BARS/OFF"	S2 TEST /VA-77 board → "ON"
ENC/RGB switch (side panel) → "ENC"	S4 (WHT CLIP)/PR-121P board → "OFF"

■ Adjustment procedures

Test point : TEST OUT terminal
 Adj. point : ● RV4/EN-69P board
 Spec. : A = 700 ±10 mV



Adjust ● RV9 and
 ● RV28/PR-121P
 repeatedly so that
 the carrier leakage is
 minimum.



EN-69/69P BOARD (COMPONENT SIDE)

■ Note

After this adjustment is completed, set the switches as follows.

- S2 **TEST** /VA-77 board → "OFF"
- S4 (WHT CLIP)/PR-121P board → "ON"

Step 27. Color-bar Adjustment

■ Note

Be sure to complete step 26. EN Y Level Adjustment

■ Setting

Equipment : Waveform monitor (WFM)

To be extended : EN-69 board

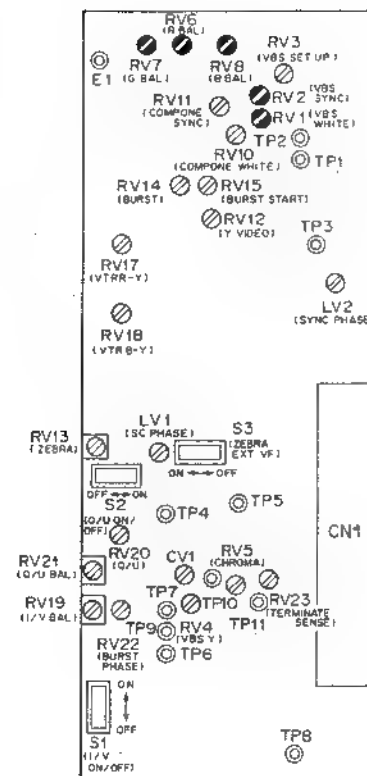
■ Preparation

- OUTPUT/DCC switch (side panel) → "BARS/OFF"
- ENC/RGB switch (side panel) → "ENC"

■ Adjustment procedures

1. Adjust \odot RV7, \odot RV6 and \odot RV8/EN-69 board so that the white level "A" at TEST OUT terminal is 700 ± 10 mV and the carrier leakage is minimized.
2. Test port : TEST OUT terminal
Adjust : B = 300 ± 10 mV; \odot RV2/EN-69 board

Minimize the carrier leakage



EN-69/69P BOARD (COMPONENT SIDE)

■ Note

After this adjustment is completed, set the OUTPUT/DCC switch (side panel) at "CAM/OFF".

Step 28. U.V. Gain Adjustment

■ Setting

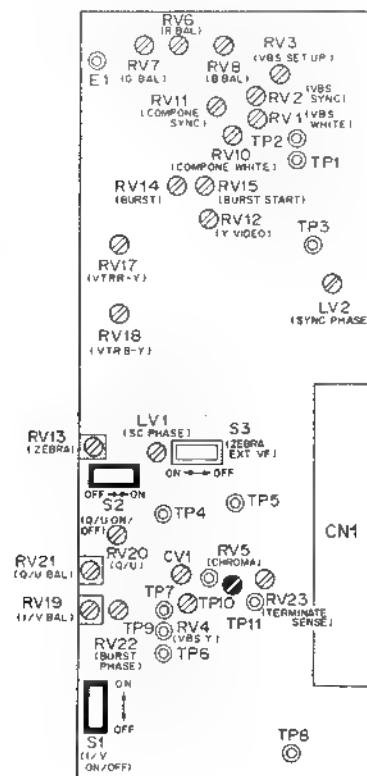
Equipment : Vectorscope	To be extended : EN-69P board
-------------------------	-------------------------------

■ Preparation

1. OUTPUT/DCC switch (side panel) → "BARS/OFF"
S1(V)/EN-69P board → "ON"
S2(U)/EN-69P board → "OFF"
2. Adjust the PHASE control of the vectorscope so that the V signal is overlapped with V axis on the vectorscope screen.

■ Adjustment procedures

1. Test point : TEST OUT terminal
Adj. point : ● RV5/EN-69P board
Spec. : The beam spots at both ends of the V signal should be overlapped with the scale of the vectorscope screen.



EN-69/69P BOARD (COMPONENT SIDE)

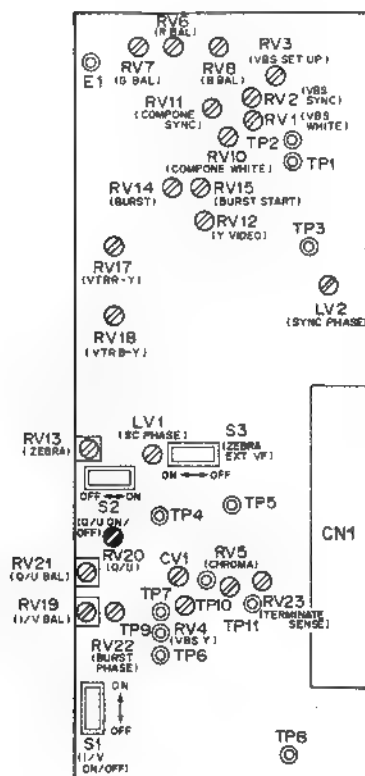
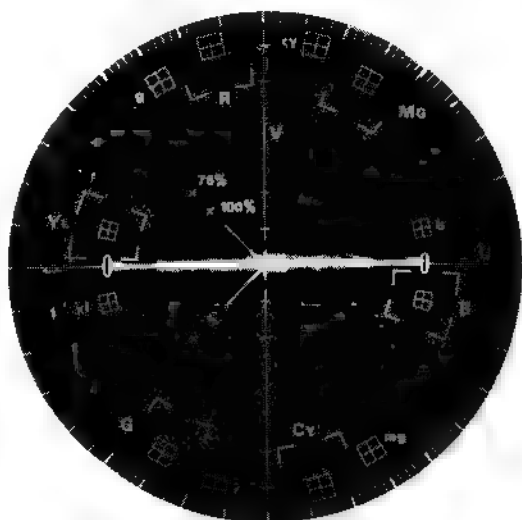
2. S1 (V)/EN-69P board → "OFF"
S2 (U)/EN-69P board → "ON"

3. Adjust the PHASE control of the vectorscope so that the U signal is overlapped with the U axis on the vectorscope screen.



(Proceed to next page)

4. Test point : TEST OUT terminal
 Adj. point : ● RV20/EN-69P board
 Spec. : The beam spots at both ends of the U signal should be overlapped with the scale of the vectorscope screen.



EN-69/69P BOARD (COMPONENT SIDE)

■ Note

After this adjustment is completed, set the switches as follows:

- OUTPUT/DCC switch (side panel) → "CAM/OFF"
- S1 (V)/EN-69P board → "ON"
- S2 (U)/EN-69P board → "ON"

Step 29. Burst Adjustment

■ Setting

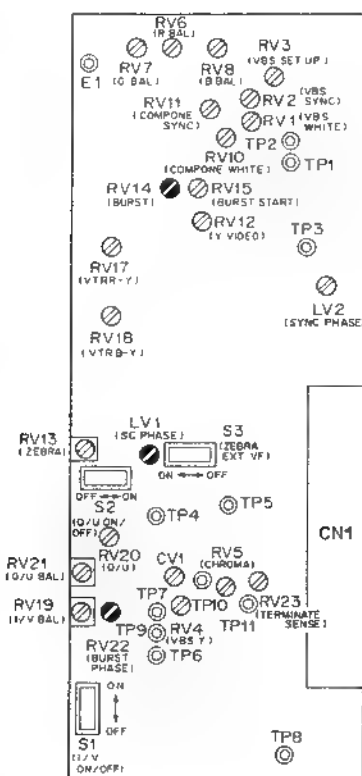
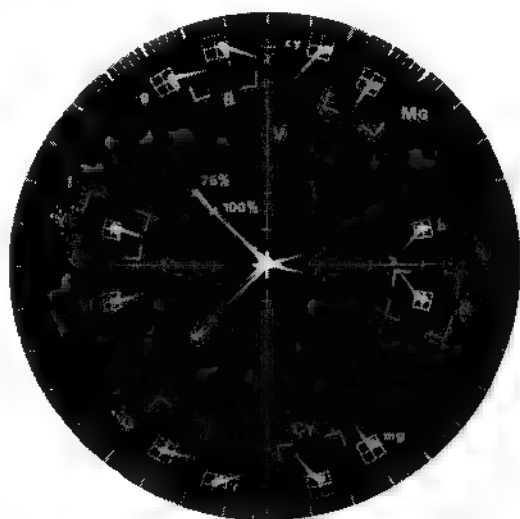
Equipment : Vectorscope	To be extended : EN-69P board
-------------------------	-------------------------------

■ Preparation

1. S1 (V)/EN-69P board → "ON"
S2 (U)/EN-69P board → "ON"
OUTPUT/DCC switch (side panel) → "BARS/OFF"
2. Adjust the PHASE control of the vectorscope so that the burst spot is overlapped with 75% scale on the vectroscope screen.

■ Adjustment procedures

1. Test point : TEST OUT terminal
Adjust : Adjust the PHASE control of the vectroscope, **RV14** (BURST), **RV22** (BURST PHASE) and **LV1** (SC PHASE)/EN-69P board so that the beam spot of the burst signal is overlapped with the 75% scale on the vectroscope.



EN-69/69P BOARD (COMPONENT SIDE)

■ Note

After this adjustment is completed, set the OUTPUT/DCC switch (side panel) at "CAM/OFF".

Step 30. VTR Y Adjustment

■ Note

Be sure to connect the CA-50P/3AP camera adaptor with the BVP-7P camera.

■ Setting

Equipment : Oscilloscope, Waveform monitor
To be extended : EN-69P board

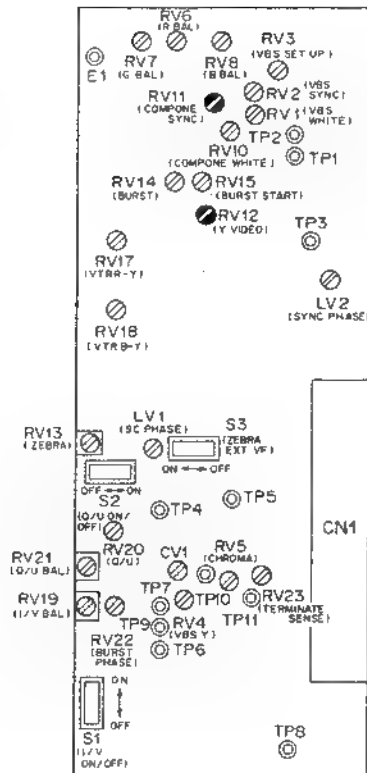
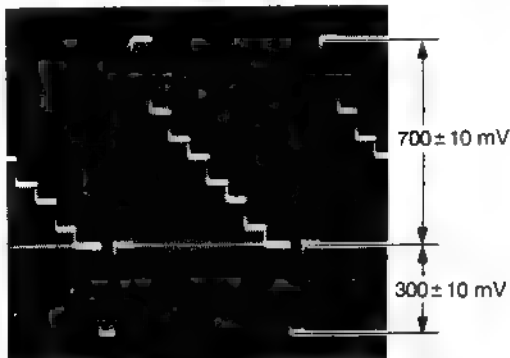
Trigger : HD (TP34/extension board)

■ Preparation

OUTPUT/DCC switch (side panel) → "BARS/OFF"

■ Adjustment procedures

1. Adjust \odot RV12 (Y VIDEO)/EN-69P board so that the white level is 700 ± 10 mV.
2. Adjust \odot RV11 (COMPONE SYNC)/EN-69P board so that the sync level is 300 ± 10 mV.



EN-69/69P BOARD (COMPONENT SIDE)

■ Note

After this adjustment is completed, set the OUTPUT/DCC switch (side panel) at "CAM/OFF".

Step 31. VTR R-Y Gain Adjustment

■ Note

Be sure to connect the CA-50P/3AP camera adaptor with the BVP-7P camera.

■ Setting

Equipment : Oscilloscope
To be extended : EN-69P board

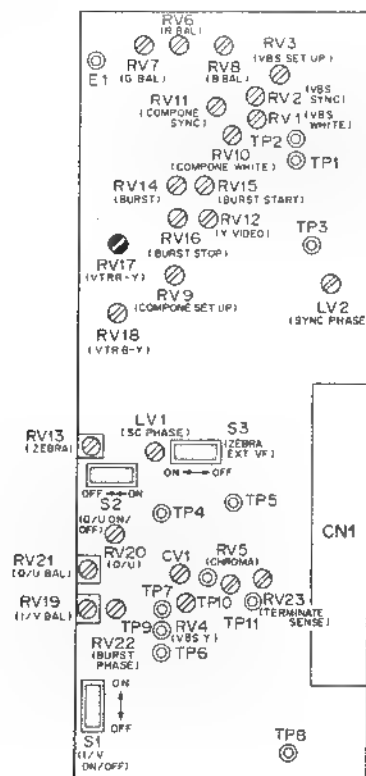
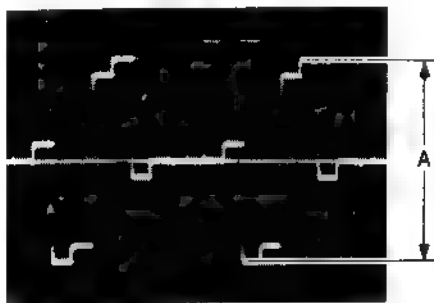
Trigger : HD (TP34/extension board)

■ Preparation

OUTPUT/DCC switch (side panel) → "BARS/OFF"

■ Adjustment procedures

Test point : TP19/extension board
Adj. point : RV17/EN-69P board
Spec. : A = 525 ± 5 mVp-p



EN-69/69P BOARD (COMPONENT SIDE)

■ Note

After this adjustment is completed, set the OUTPUT/DCC switch at "CAM/OFF".

Step 32. VTR B-Y Gain Adjustment

■ Note

Be sure to connect the CA-50P/3AP camera adaptor with BVP-7P camera.

■ Setting

Equipment : Oscilloscope
To be extended : EN-69P board

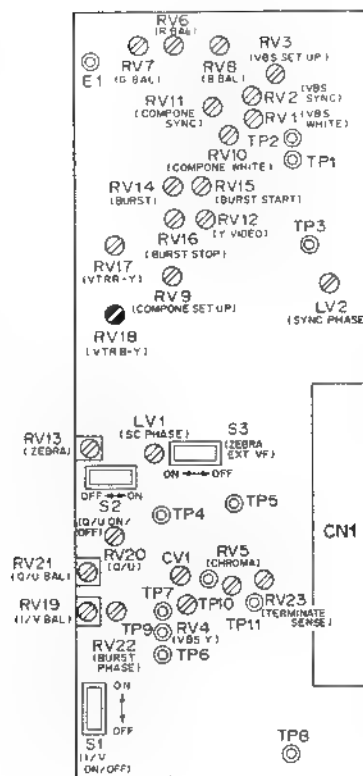
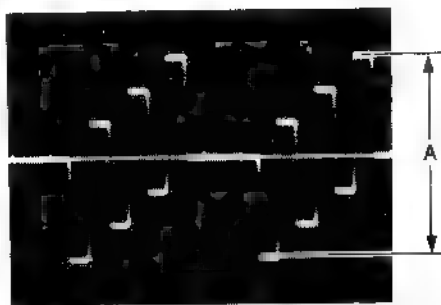
Trigger : HD (TP34/extension board)

■ Preparation

OUTPUT/DCC switch (side panel) → "BARS/OFF"

■ Adjustment procedures

Test point : TP18/extension board
Adj. point : ● RV18/EN-69P board
Spec. : $A = 525 \pm 5$ mVp-p



EN-69/69P BOARD (COMPONENT SIDE)

■ Note

After this adjustment is completed, set the OUTPUT/DCC switch (side panel) at "CAM/OFF".

Step 33. Zebra Level Adjustment

■ Setting

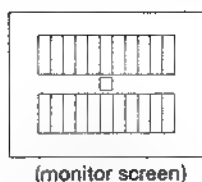
Object	: Grayscale chart	To be extended :	EN-69P board
Equipment	: Waveform monitor (WFM)		

■ Preparation

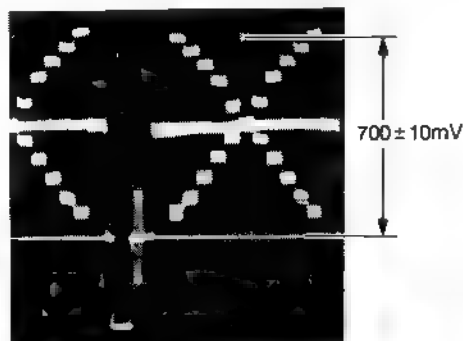
ENC/RGB switch (side panel) → "ENC"
TALLY/ZEBRA ON/OFF switch (viewfinder) → "ZEBRA"

■ Adjustment procedures

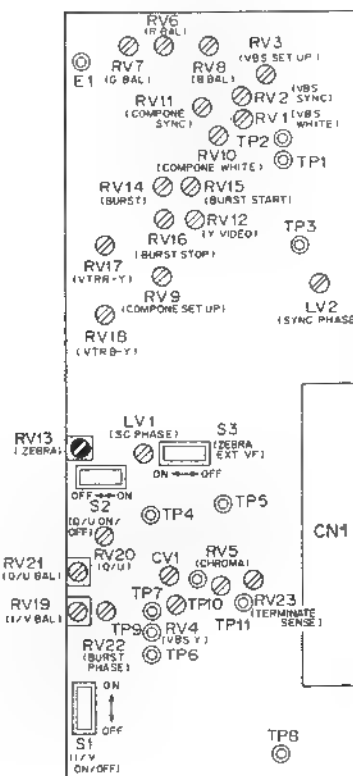
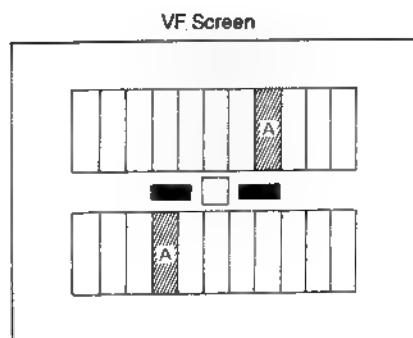
1. Adjust the zoom control so that the grayscale chart frame touches the underscanned picture frame on the monitor screen.



2. Adjust the iris control so that the white level at TEST OUT terminal is 700 ± 10 mV.



3. Adjust RV13(ZEBRA)/EN-69P board so that the striped pattern appears in the portion A of the VF screen as shown below.



Step 34. Gamma Correction Adjustment

■ Note

Be sure to complete step 24. PR OUT Gain Adjustment.

■ Setting

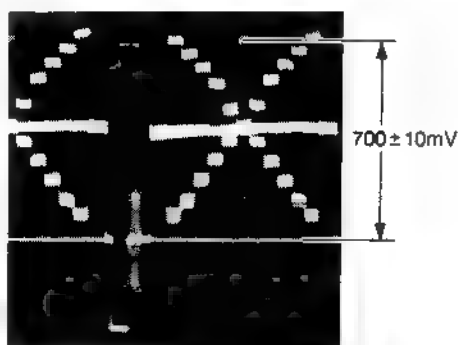
Object : Grayscale chart	To be extended : PR-121P board
Equipment : Waveform monitor	

■ Preparation

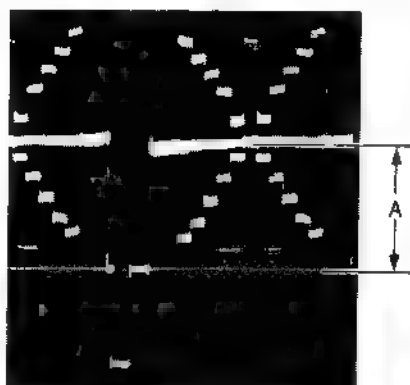
ENC/RGB switch (side panel) → "RGB"	S3 (γ ON/OFF)/PR-121P board → "ON"
G/OFF switch (side panel) → "G"	
R/OFF/B switch (side panel) → "OFF"	
S4 (WHT CLIP)/PR-121P board → "OFF"	

■ Adjustment procedures

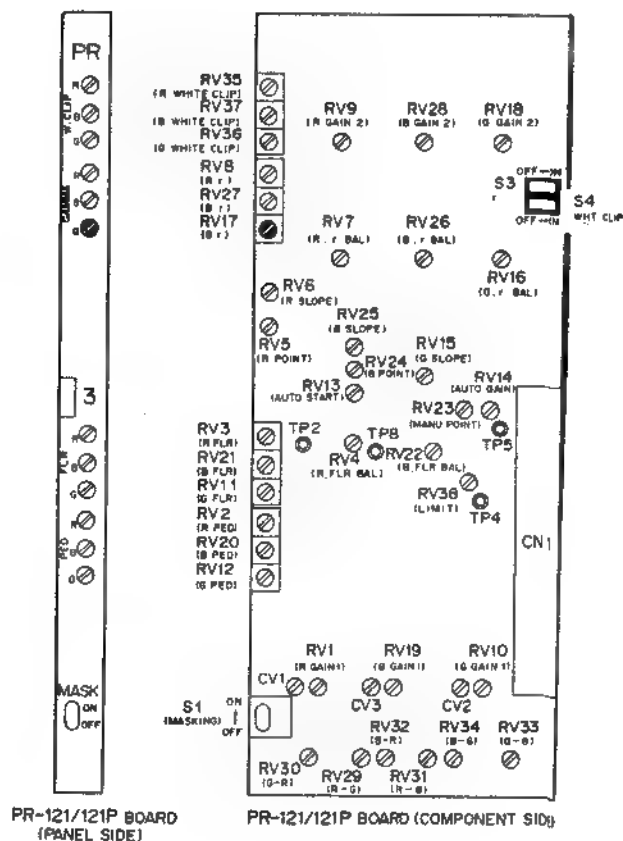
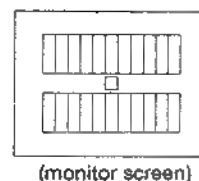
1. Adjust the zoom control so that the grayscale chart frame touches the underscanned picture frame on the monitor.
2. Adjust the iris control so that the white level at TEST OUT terminal is 700 ± 10 mV.



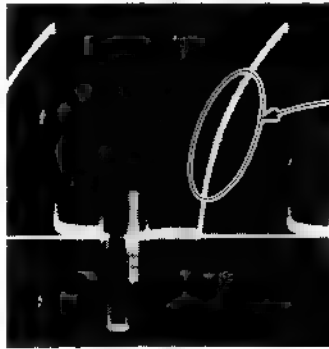
3. Test point : TEST OUT terminal
Adj. point : RV17/PR-121P board
Spec. : Cross point level "A" = 400 ± 20 mV



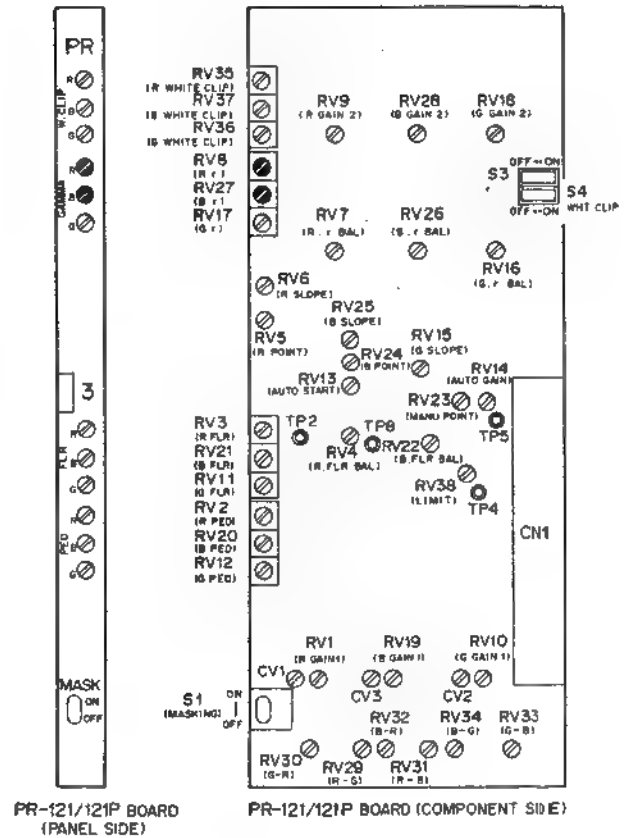
(Proceed to next page)



4. ENC/RGB switch (side panel) → "ENC"
S2 **TEST** /VA-77 board → "ON"
5. Test point : TEST OUT terminal
Adj. point : ● RV8 **R GAMMA** /PR-121P board
● RV27 **B GAMMA** /PR-121P board



Minimize the carrier leakage



■ Note

- After this adjustment is completed, set the switches as follows:
S2 **TEST** /VA-77 board → "OFF"
S4 (WHT CLIP)/PR-121P board → "ON"
- After this adjustment is completed, confirm that step 22. Black Set•Pedestal Adjustment is satisfied with the specification.

ALLEGAT

Be sure to complete step 14. Pre Knee Adjustment.

Equipment : Waveform monitor (WFM)	To be extended : PR-121P board
------------------------------------	--------------------------------

GAIN switch (side panel)	→ "G"	RV5/PR-121P board	→ mechanical center
OUTPUT/DCC switch (side panel)	→ "CAM/OFF"	RV24/PR-121P board	→ mechanical center
ENC/RGB switch (side panel)	→ "RGB"	RV15/PR-121P board	→ fully clockwise
G/OFF switch (side panel)	→ "G"	RV6/PR-121P board	→ fully clockwise
R/OFF/B switch (side panel)	→ "OFF"	RV25/PR-121P board	→ fully clockwise
S2(TEST)/VA-77 board	→ "ON"	RV36/PR-121P board	→ fully counterclockwise
S3(γ ON/OFF)/PR-121P board	→ "ON"	RV35/PR-121P board	→ fully counterclockwise
S4(WHT CLIP)/PR-121P board	→ "ON"	RV37/PR-121P board	→ fully counterclockwise

1. Adjust RV23(MANU POINT)/PR-121P board so that the knee point level at TEST OUT terminal is 690 ± 10 mV.

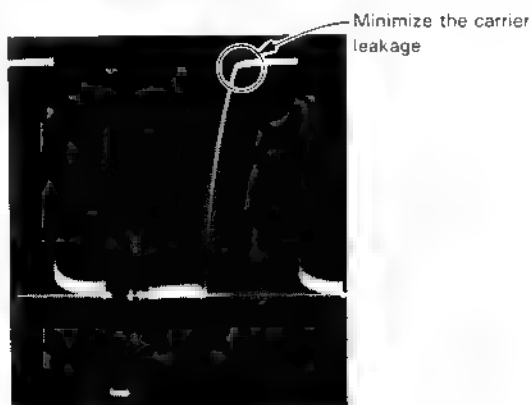


PR-121/121P BOARD (COMPONENT SIDE)

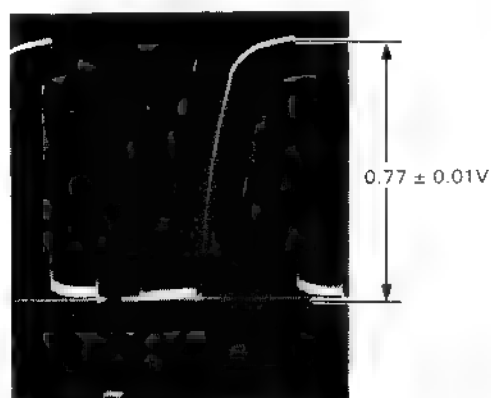


BVP-7P (EK)
BVP-7000HSP (EK)

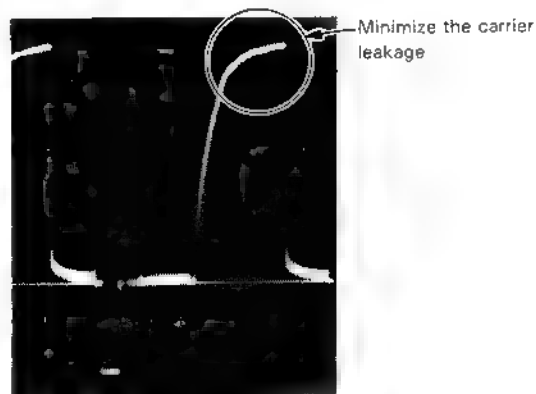
- Adjust \odot RV5 (R POINT) and \odot RV24 (B POINT)/PR-121P board so that the carrier leakage at the knee point of the TEST SAW waveform is minimized.



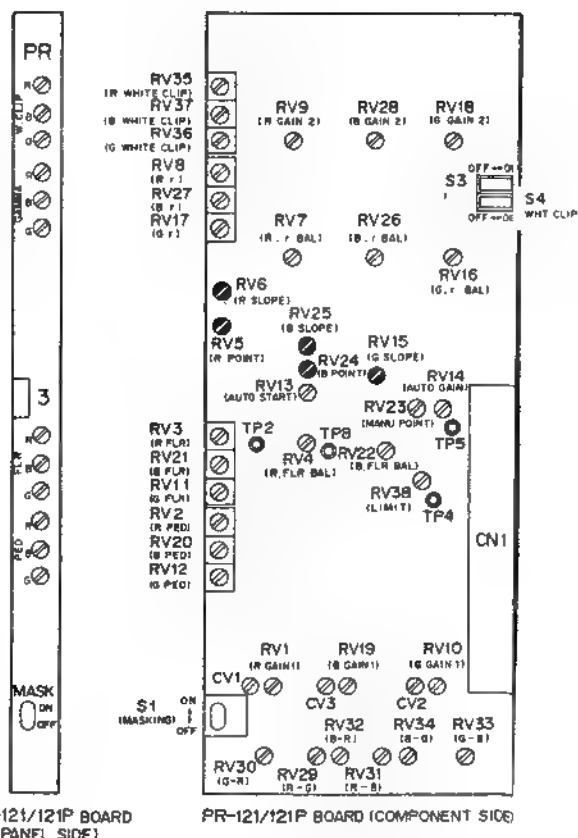
- ENC/RGB switch (side panel) \rightarrow "RGB"
G/OFF switch (side panel) \rightarrow "G"
- Adjust \odot RV15 (G SLOPE)/PR-121P board so that the peak level of the TEST SAW waveform is 0.77 ± 0.01 V.



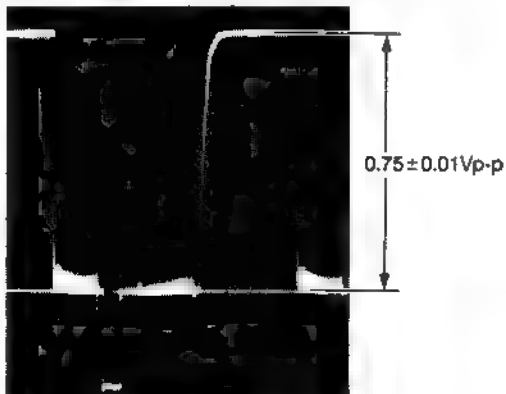
- ENC/RGB switch (side panel) \rightarrow "ENC"
- Adjust \odot RV6 (R SLOPE) and \odot RV25 (B SLOPE)/PR-121P board so that the carrier leakage of the TEST SAW waveform is minimized.



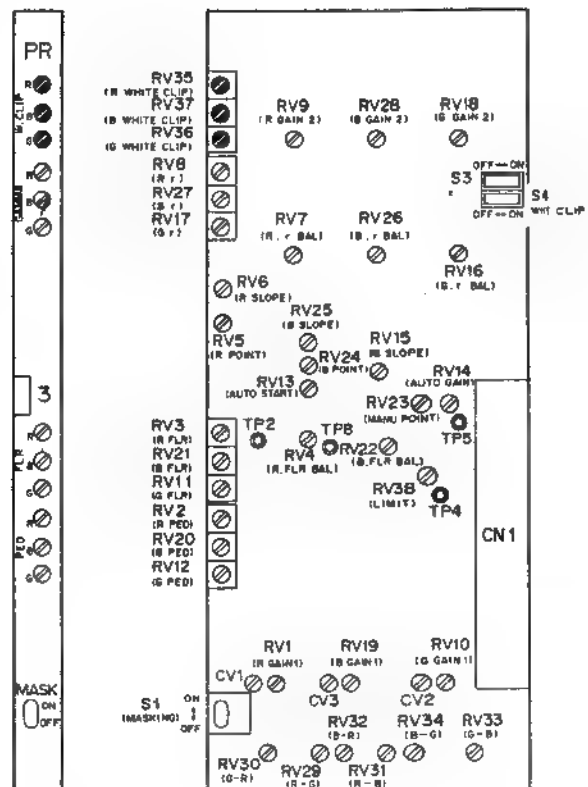
(Proceed to next page)



8. ■ ENC/RGB switch (side panel) → "RGB"
 ■ G/OFF switch (side panel) → "G"
 ■ GAIN switch (side panel) → "18"
9. Adjust **RV36** **G WHT CLIP** /PR-121P board so that the TEST SAW waveform clips at 0.75 ± 0.01 V.



10. ENC/RGB switch (side panel) → "ENC"
11. Adjust **RV35** **R WHT CLIP** and **RV37** **B WHT CLIP** /PR-121P board so that the carrier leakage of the TEST SAW waveform is minimized.



■ Note

After this adjustment is completed, be sure to carry out step 36. Auto Knee Adjustment.

Step 36. Auto Knee Adjustment

■ Note

Be sure to complete step 35. manual Knee-White Clip Adjustment.

■ Setting

Equipment : Oscilloscope, Waveform monitor	Trigger : CP (TP35/extension board)
To be extended : PR-121P board	

■ Preparation

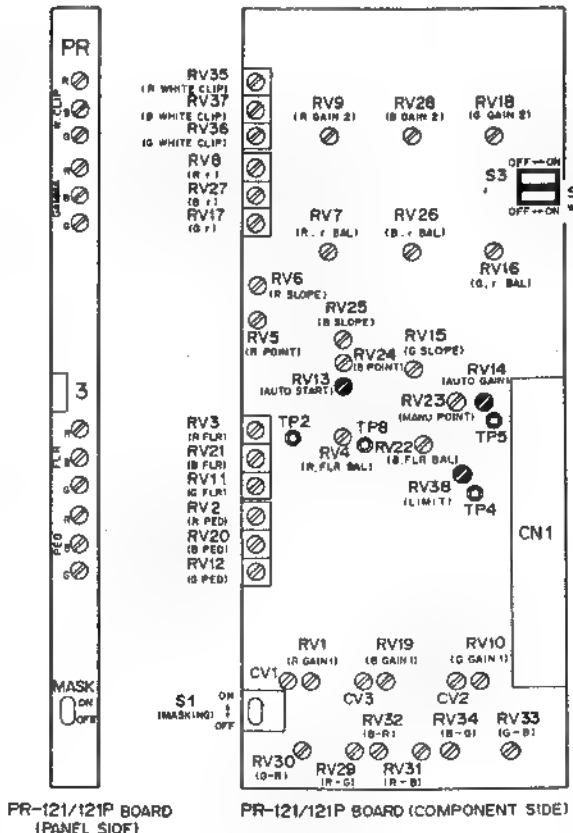
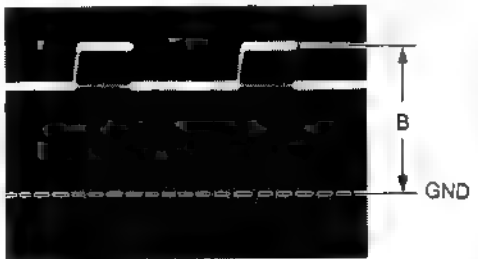
OUTPUT/DCC switch (side panel) → "CAM/OFF"	S3 (γ ON/OFF)/PR-121P board → "ON"
GAIN switch (side panel) → "0"	RV38 (AUTO LIMIT)/PR-121P board → mechanical center
ENC/RGB switch (side panel) → "ENC"	RV14 (AUTO GAIN)/PR-121P board → fully counterclockwise
S2 (TEST)/VA-77 board → "ON"	
S4 (WHT CLIP)/PR-121P board → "ON"	

■ Adjustment procedures

1. Test point : TP5/PR-121P board
Adj. point : RV13/PR-121P board
Spec. : $A = 1.6 \pm 0.05 \text{ Vdc}$



2. GAIN switch (side panel) → "18"
3. Test point : TP5/PR-121P board
Adj. point : RV38/PR-121P board
Spec. : $B = 1.9 \pm 0.05 \text{ Vdc}$



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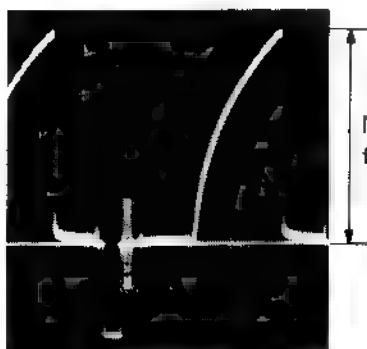
4. GAIN switch (side panel) → "0"

5. Test point : TEST OUT terminal

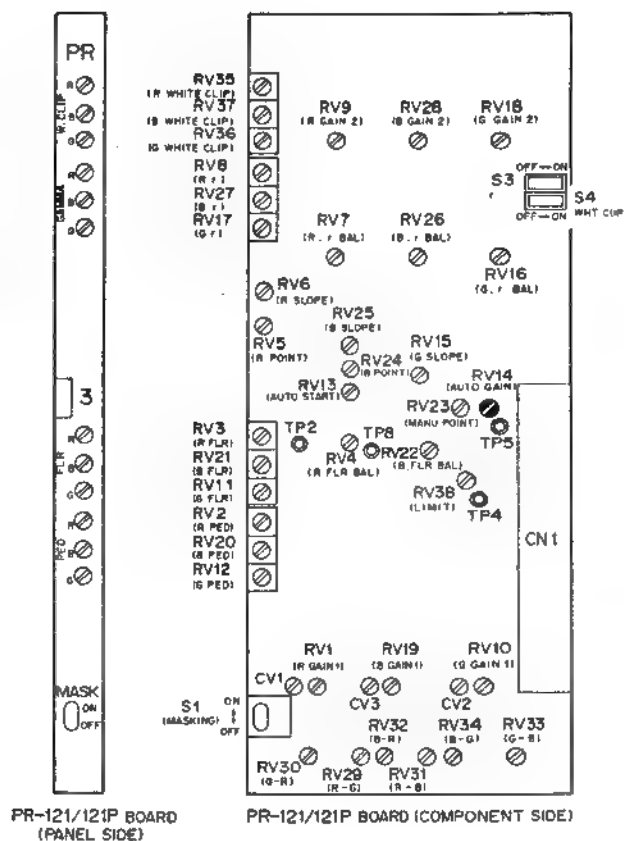
Adj. point : RV14/PR-121P board

Adjust : Turn RV14 on PR-121P board

The peak level of waveform does not change even if the DCC switch is set any position of ON or OFF.



Not be
fluctuated.



■ Note

After this adjustment is completed, set the switches as follows:

- OUTPUT/DCC switch (side panel) → "CAM/OFF"
- GAIN switch (side panel) → "0"
- S2 **TEST** /VA-77 board → "OFF"

Step 37. White Clip Adjustment

■ Setting

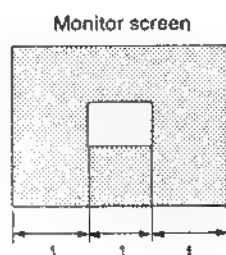
Object	: White window chart	To be extended	: IE-24P board
Equipment	: Oscilloscope	Trigger	: TP10/extension board

■ Preparation

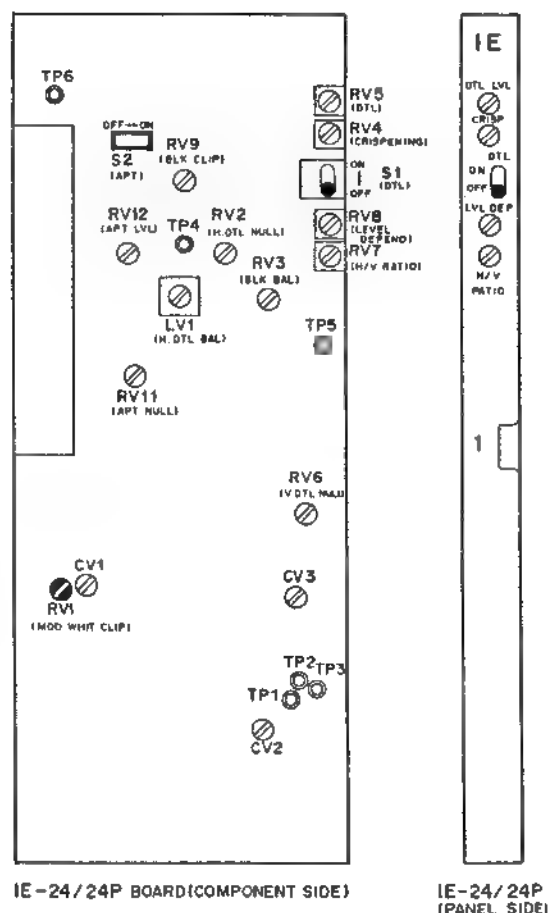
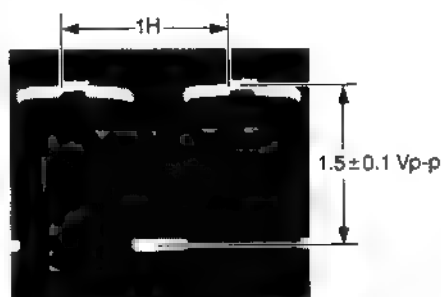
ENC/RGB switch (side panel)	→ "ENC"
GAIN switch (side panel)	→ "9"
S1 (DTL)/IE-24P board	→ "ON"
S2 (APERTURE)/IE-24P board	→ "OFF"

■ Adjustment procedures

1. Adjust the zoom control and shoot the white window chart as shown below.



2. Open the lens iris slowly and Adjust \odot RV1 (MOD WHITE CLIP)/IE-24P board so that the waveform at TP6/extension board clips at 1.5 ± 0.1 Vp-p.



IE-24/24P BOARD (COMPONENT SIDE)

IE-24/24P (PANEL SIDE)

■ Note

After this adjustment is completed, set the GAIN selector (side panel) to "0".

Step 38. V DTL Null Adjustment

■ Setting

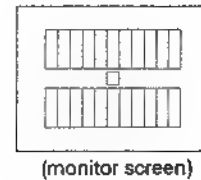
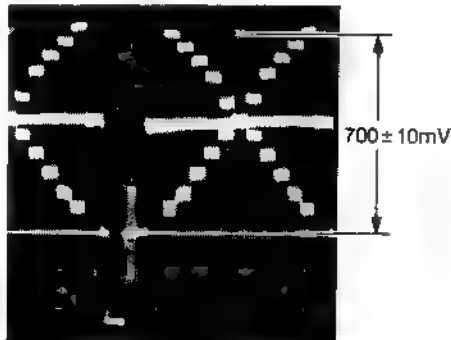
Object	: Grayscale chart	To be extended :	IE-24P board
Equipment	: Oscilloscope, Waveform monitor		

■ Preparation

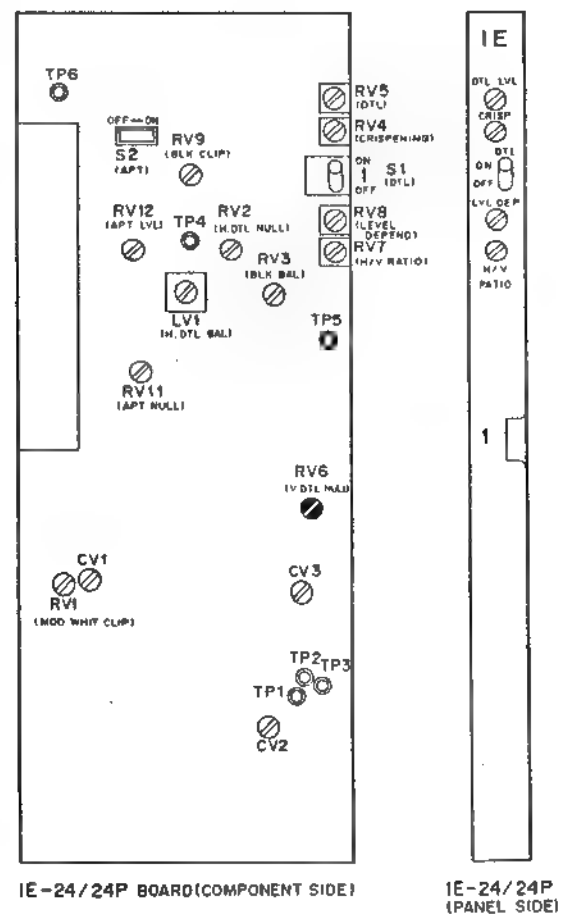
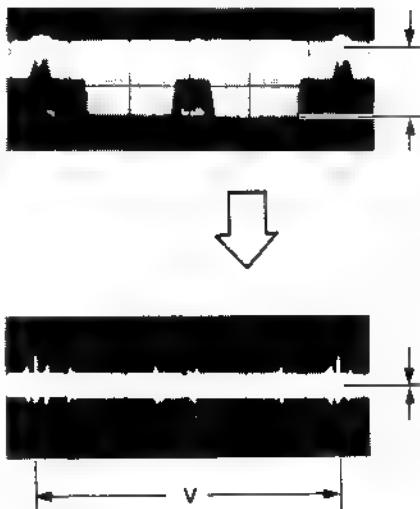
ENC/RGB switch (side panel)	→ "ENC"
S1 <input type="checkbox"/> DTL / IE-24P board	→ "ON"

■ Adjustment procedures

1. Adjust the zoom control so that the gray scale chart frame touches the underscanned picture frame on the monitor.
2. Adjust the iris control so that the white level at TEST OUT terminal is 700 ± 10 mV.



3. Test point : TP5/IE-24P board
Adj. point : RV6/IE-24P board



Step 39. 1H, 2H DELAY Signal Phase Adjustment

■ Setting

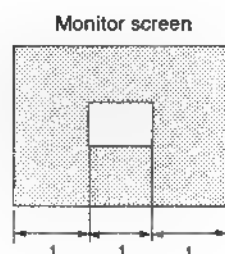
Object	: White window chart	To be extended	: IE-24P board
Equipment	: Oscilloscope	Trigger	: TP10/extension board

■ Preparation

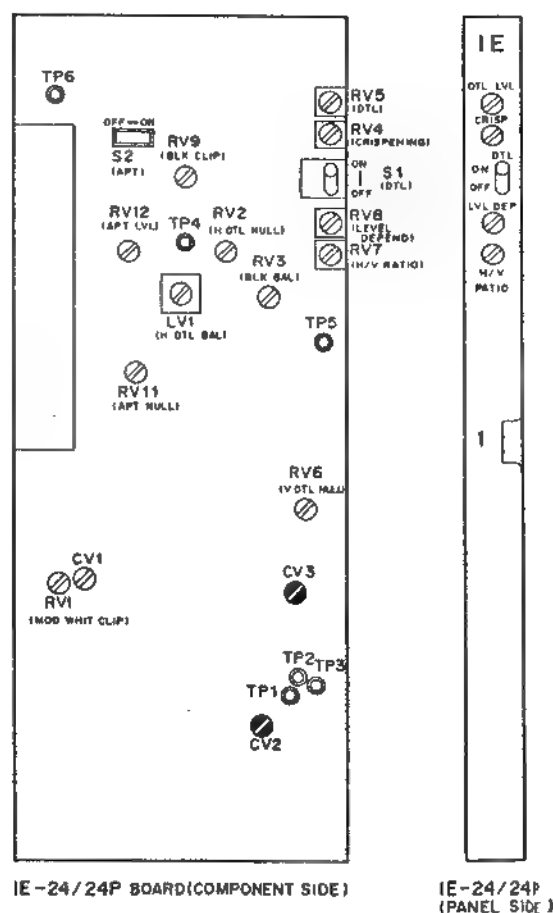
ENC/RGB switch (side panel)	→ "ENC"
S1 [DTL] /IE-24P board	→ "ON"

■ Adjustment procedures

1. Adjust the zoom control and shoot the white window chart as shown below.

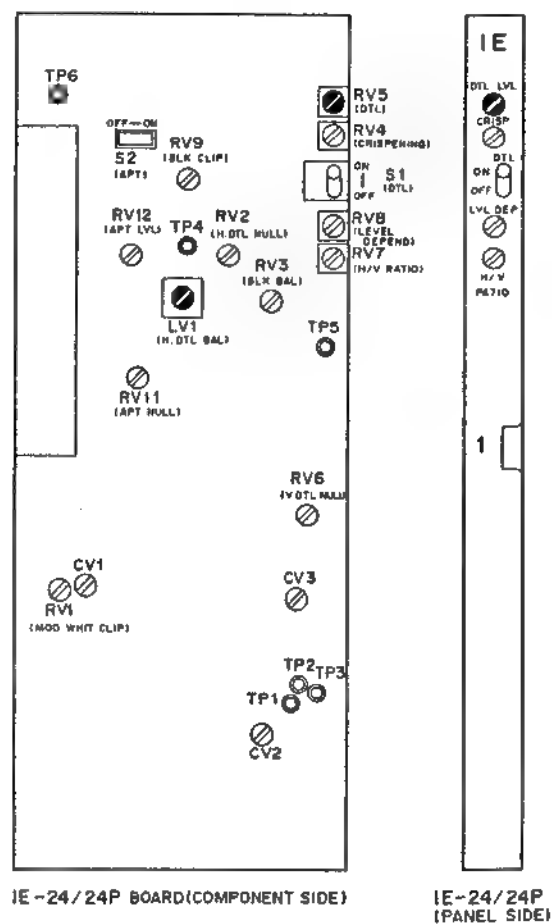
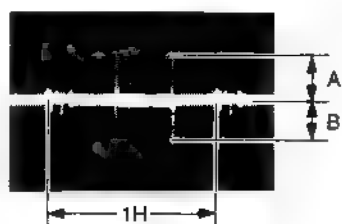


2. Adjust the iris control so that the white level at TEST OUT terminal is 700 ± 10 mV.
3. Test point : TP5(GND:E1)/IE-24P board
Adj. point : ● CV2 ● CV3/IE-24P board
Adjust : Adjust so that the detail signal is not added to the waveform.



4. RV5 [DTL] /IE-24P board → fully clockwise ⤴

5. Test point : TP4/IE-24P board
 Adj. point : LV1/IE-24P board
 Spec. : A = B



■ Note

After this adjustment is completed, be sure to carry out step 41. Black Balance Adjustment.

Step 41. Black Balance Adjustment

■ Setting

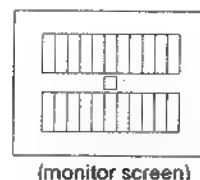
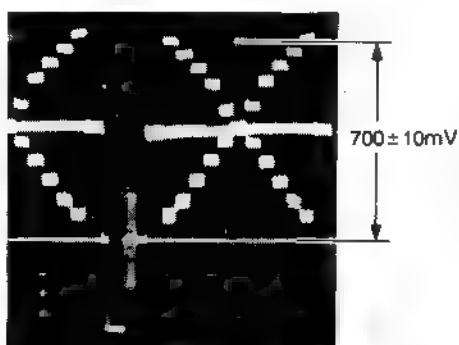
Object	: Grayscale chart	To be extended	: IE-24P board
Equipment	: Oscilloscope, Waveform monitor	Trigger	: TP10/extension board

■ Preparation

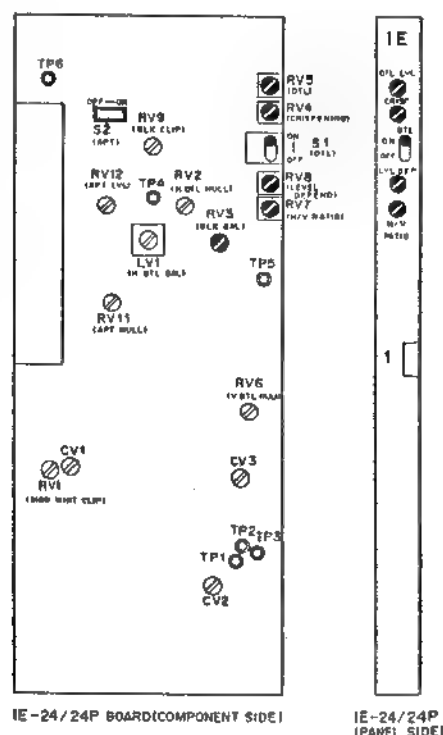
- S1 [DTL ON/OFF] /IE-24P board → "ON"
 S2 [APERTURE] /IE-24P board → "OFF"
 RV5 [DTL] /IE-24P board → fully clockwise ⤴
 RV4 [CRISP] /IE-24P board → fully counterclockwise ⤵
 RV8 [LEV DEP] /IE-24P board → fully counterclockwise ⤵
 RV7 [H/V RATIO] /IE-24P board → mechanical center

■ Adjustment procedures

1. Adjust the zoom control so that the gray scale chart frame touches the underscanned picture frame on the monitor.
2. Adjust the iris control so that the white level at TEST OUT terminal is 700 ± 10 mV.



3. Test point : TP6/IE-24P board
Adj. point : RV3/IE-24P board



■ Note

After this adjustment is completed, be sure to carry out step 42. Level Dependent Adjustment.

Step 42. Level Dependent Adjustment

■ Setting

Object : Grayscale chart

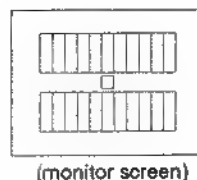
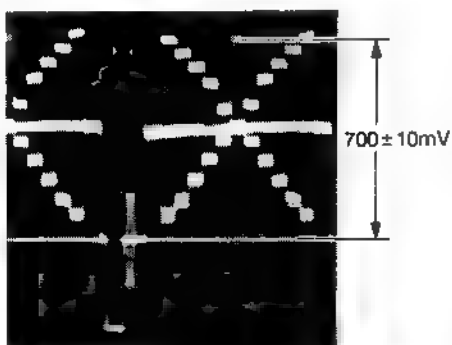
Equipment : Waveform monitor (WFM)

■ Preparation

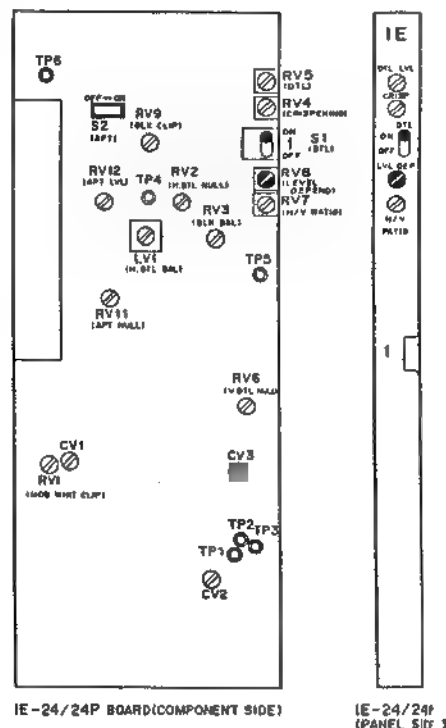
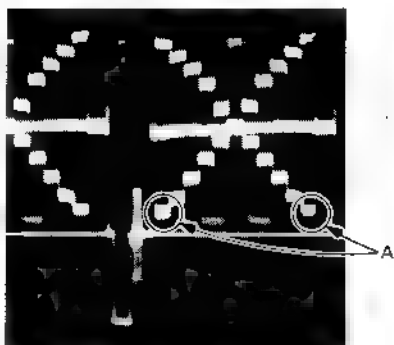
S1 [DTL ON/OFF] /IE-24P board → "ON"
 S2 (APERTURE)/IE-24P board → "OFF"
 ENC/RGB switch (side panel) → "RGB"
 G/OFF switch (side panel) → "G"
 R/OFF/B switch (side panel) → "OFF"

■ Adjustment procedures

1. Adjust the zoom control so that the gray scale chart frame touches the underscanned picture frame on the monitor.
2. Adjust the iris control so that the white level at TEST OUT terminal is 700 ± 10 mV..



3. Test point : TEST OUT terminal
 Adj. point : RV8 [LEV DEP] /IE-24P board
 Spec. : The detail signal is not added to the portion A of the waveform at TEST OUT terminal.



4. ENC/RGB switch (side panel) → "ENC"

■ Note

After this adjustment is completed, be sure to carry out step 45. H/V RATIO Adjustment.

Step 43. Aperture DTL Null Adjustment

■ Setting

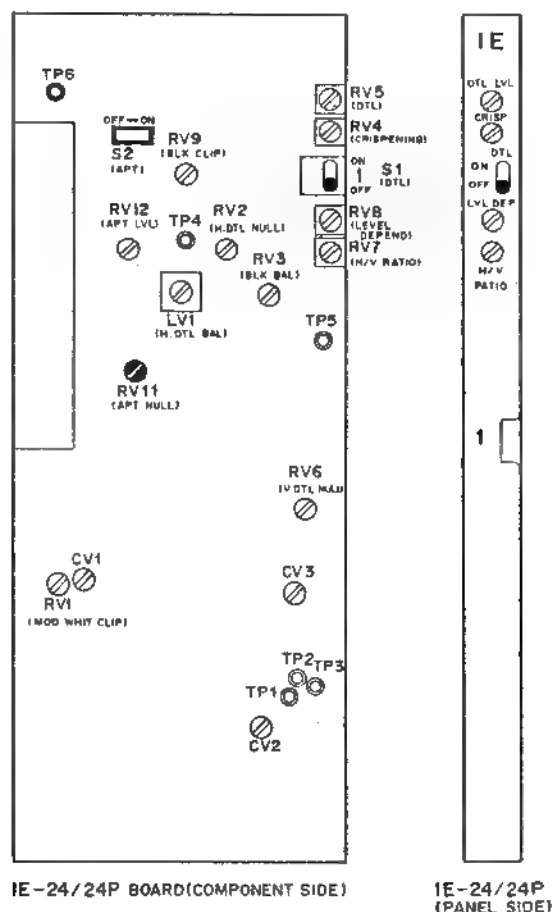
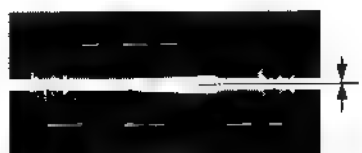
Equipment : Oscilloscope	Trigger : TP10/extension board
To be extended : IE-24P board	

■ Preparation

S2 [TEST] /VA-77 board	→ "ON"
S1 [DTL ON/OFF] /IE-24P board	→ "OFF"
S2(APERTURE)/IE-24P board	→ "ON"

■ Adjustment procedures

Test poing : TP6/IE-24P board
 Adj. point : RV11/IE-24P board
 Adjust :



Step 44. Aperture Waveform Adjustment

■ Setting

Object	: multiburst chart	To be extended :	IE-24P board
Equipment	: Waveform monitor (WFM)		

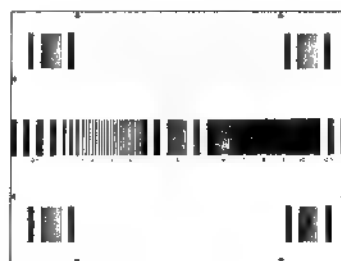
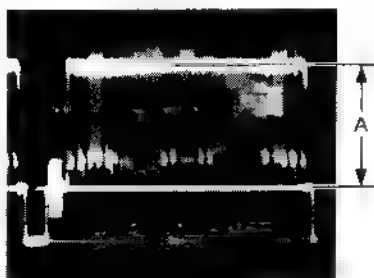
■ Preparation

S1	DTL ON/OFF/IE-24P board	→ "OFF"
S2	APERTURE/IE-24P board	→ "ON"

■ Adjustment procedures

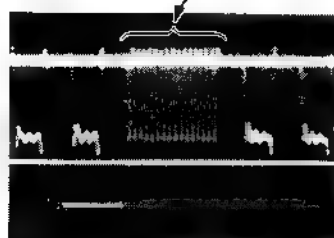
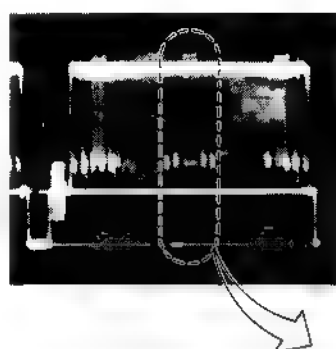
1. Adjust the zoom control so that the Multiburst chart frame touches the underscanned picture frame on the monitor.

2. Test point : TEST OUT terminal
Adj. point : Lens iris
Spec. : $A = 700 \pm 10$ mV

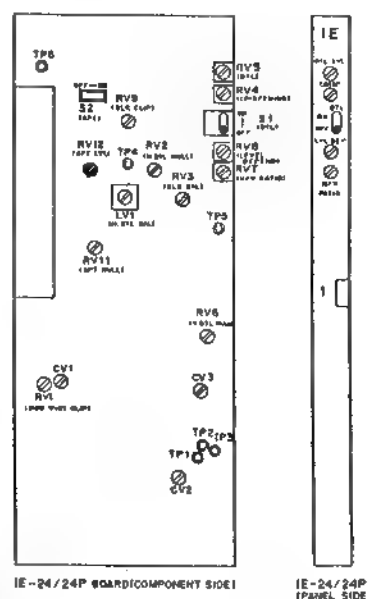


(monitor screen)

3. Test poing : TEST OUT terminal
Adj. point : RV12/IE-24P board
Spec. : TEST OUT waveform should be flat at 5 MHz.



Test out waveform is flat at 5 MHz



Step 45. H/V RATIO Adjustment

■ Setting

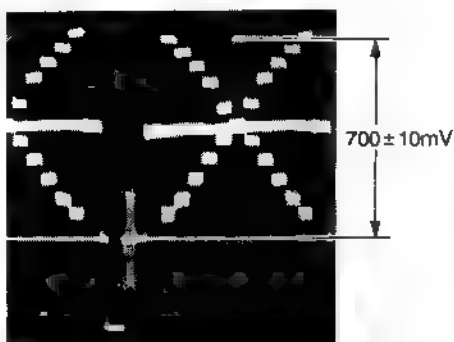
Object : Grayscale chart	Equipment : Waveform monitor (WFM)
--------------------------	------------------------------------

■ Preparation

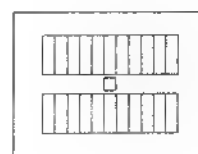
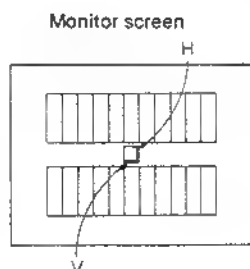
S1 [DTL ON/OFF] /IE-24P board	→ "ON"
S2 [APERTURE] /IE-24P board	→ "OFF"
RV5 [DTL] /IE-24P board	→ fully clockwise

■ Adjustment procedures

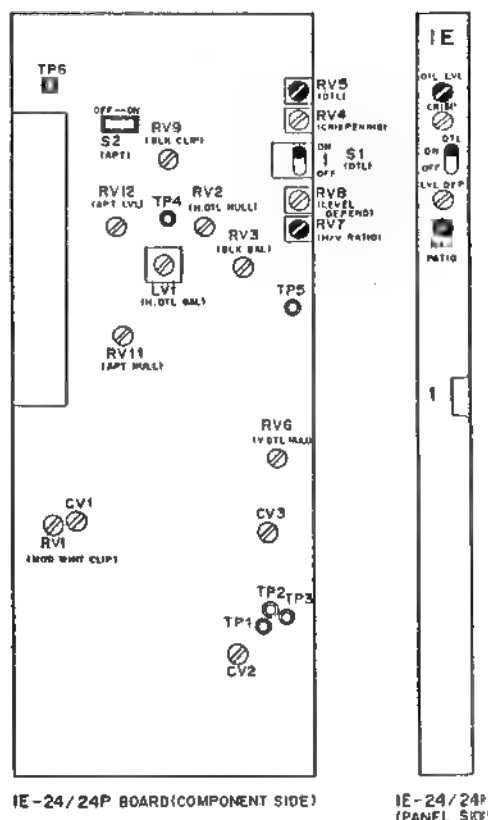
1. Adjust the zoom control so that the grayscale chart frame touches the underscanned picture frame on the monitor.
2. Adjust the iris control so that the white level at TEST OUT terminal is 700 ± 10 mV.



3. Adjust RV7(H/V RATIO)/IE-24P board so that the H and V detail amounts to be added are equivalent.



(monitor screen)



IE-24/24P BOARD (COMPONENT SIDE)

IE-24/24P (PANEL SIDE)

■ Note

After this adjustment is completed, be sure to carry out step 46. Detail Level Adjustment.

Step 46. Detail Level Adjustment

■ Setting

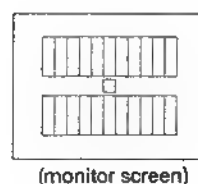
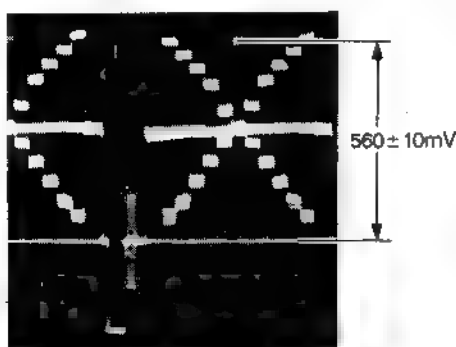
Object : Grayscale chart	Equipment : Waveform monitor (WFM)
--------------------------	------------------------------------

■ Preparation

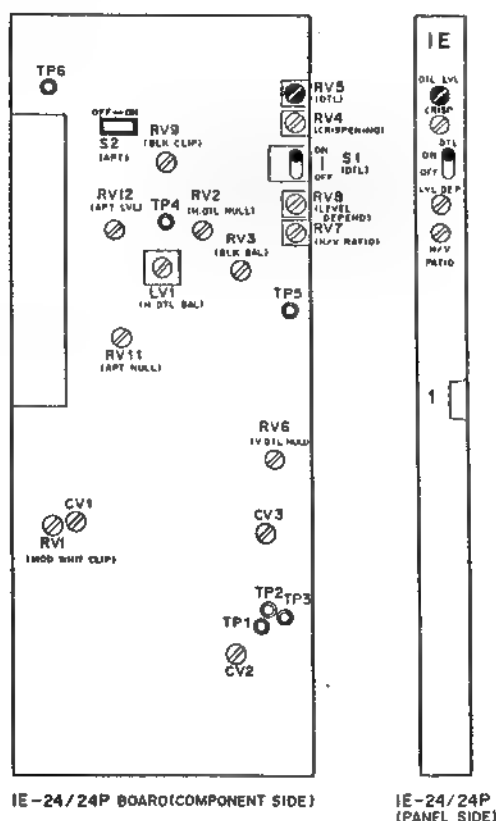
S1 [DTL ON/OFF] /IE-24P board	→ "ON"
S2 (APERTURE) /IE-24P board	→ "OFF"

■ Adjustment procedures

1. Adjust the zoom control so that the gray scale chart frame touches the underscanned picture frame on the monitor screen.
2. Adjust the iris control so that the white level at TEST OUT terminal is 560 ± 10 mV.



3. Test point : Monitor Screen
Adjust : Set the detail level according to the users' request by adjusting RV5 [DTL] /IE-24P board.



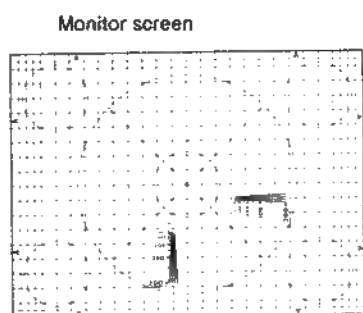
Step 47. Resolution Adjustment

■ Setting

Object : Registration chart, Resolution chart	Equipment : Waveform monitor
---	------------------------------

■ Adjustment procedures

1. Adjust the zoom control so that the registration chart frame touches the underscanned picture frame on the monitor screen.



2. Adjust the iris control so that the white level at TEST OUT terminal is 700 ± 10 mV.

3.
 - S1 **DTL** /IE-24P board → "OFF"
 - ENC/RGB switch (side panel) → "RGB"
 - G/OFF switch (side panel) → "OFF"
 - R/OFF/B switch (side panel) → "R"
 - S1 (G/-G)/RG-20P board → "-G"

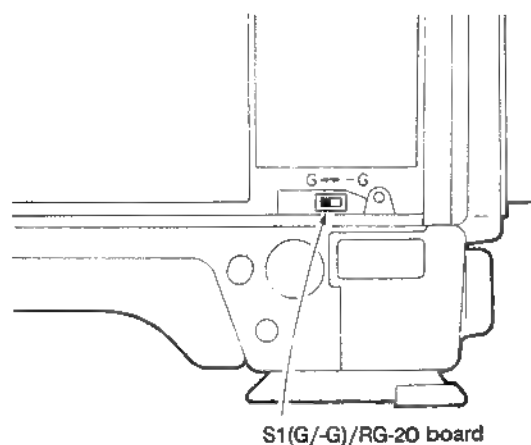
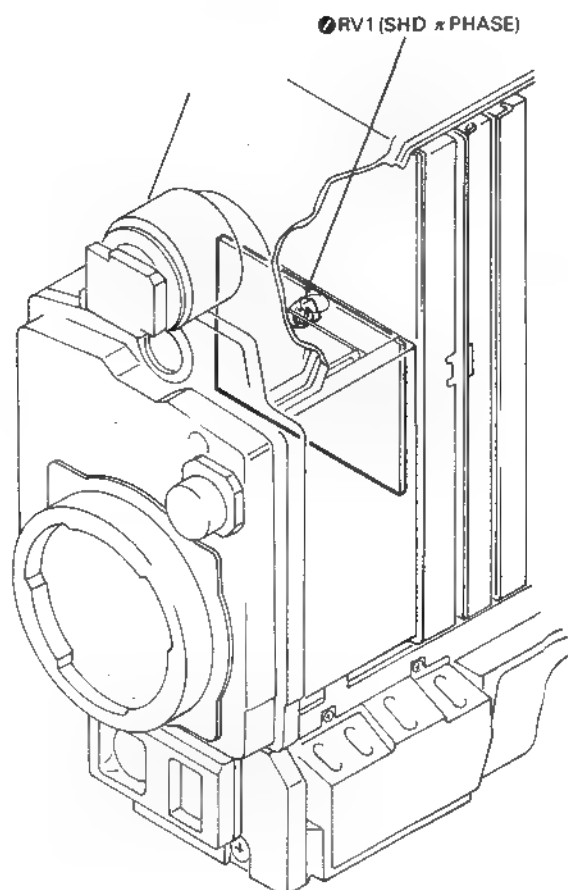
4. Adjust **RV1(SHD π PHASE)**/TG-41P board so that the picture error of R-ch and G-ch is minimized.

5.
 - ENC/RGB switch (side panel) → "ENC"
 - S1 **DTL** /IE-24P board → "ON"
 - Object → Resolution chart
 - Adjust the zoom control so that the resolution chart frame touches the underscanned picture frame on the monitor screen.

6. Make sure that the resolution of more than 700 TV lines can be seen on the monitor screen.

Note: After this adjustment is completed, set the switches as follows:

- ENC/RGB switch (side panel) → "ENC"
- S1 (G/-G)/RG-20P board → "G"



Step 48. Power Save Adjustment

■ Setting

Equipment : Digital Voltmeter	To be extended : EN-69P board
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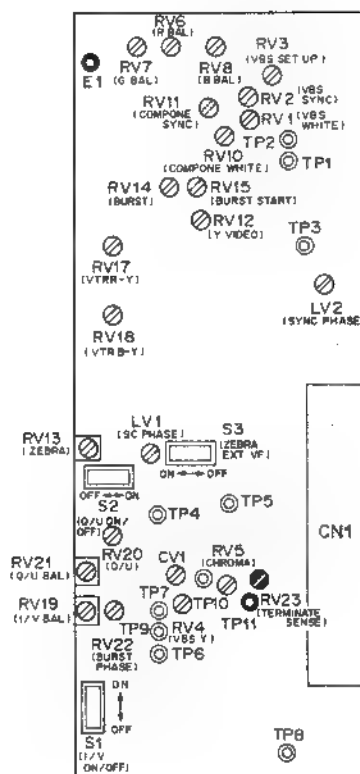
■ Adjustment procedures

Test point : TP11 (GND:E1)/EN-69P board

Adj. point : ● RV23/EN-69P board

Spec. : -0.45 ± 0.1 Vdc

Note : Confirm that the waveform at TP8/extension board is fed when the ENC/RGB selector (side panel) is set to "ENC" and it is not fed when the selector is set to "RGB".



EN-69/69P BOARD (COMPONENT SIDE)

Step 49. Black Width Adjustment

■ Setting

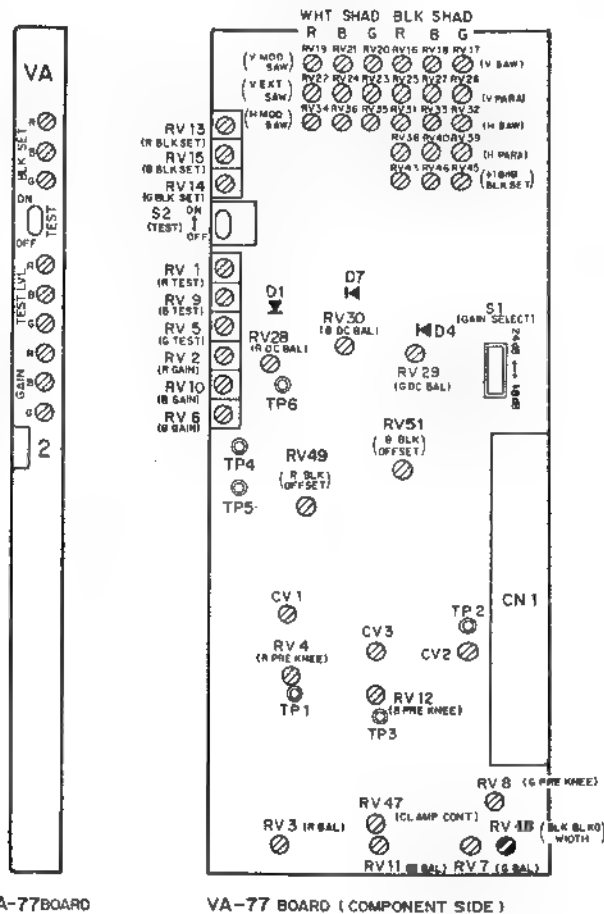
Equipment : Waveform monitor	To be extended : VA-77 board
------------------------------	------------------------------

■ Preparation

Lens iris	→ Close "C"
ENC/RGB switch (side panel)	→ "RGB"
G/OFF switch (side panel)	→ "G"
R/OFF/B switch (side panel)	→ "OFF"

■ Adjustment procedures

Test point : TEST OUT terminal
 Adjust : Turn \odot RV48 (BLK WIDTH)/VA-77 board from the right most position counterclockwise slowly untill the waveform is flat.



■ Note

After this adjustment is completed, set the ENC/RGB switch (side panel) at "ENC".

Step 50. Auto Iris Adjustment

■ Setting

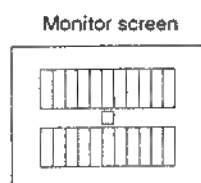
Object : Grayscale chart	Equipment : Waveform monitor
--------------------------	------------------------------

■ Preparation

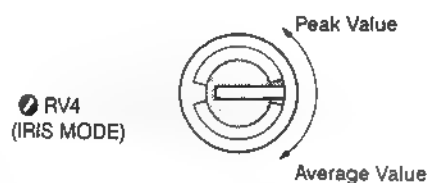
ENC/RGB switch (side panel)	→ "ENC"
Iris AUTO/MANU switch (Lens)	→ "AUTO"
OUTPUT/DCC switch (side panel)	→ "CAM/ON"

■ Adjustment procedures

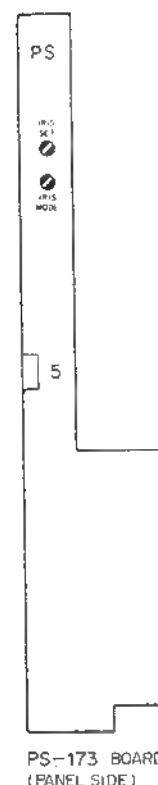
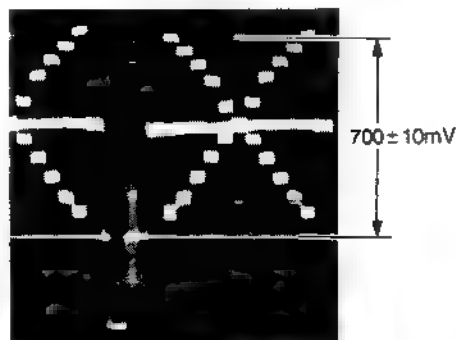
1. Adjust the zoom control so that the gray scale chart frame touches the underscanned picture frame on the monitor.



2. The iris control operation is controlled by mixing the peak level of the video signal with the average of it. That mixing ratio can be set by adjusting RV4 (IRIS MODE)/PS-173 board. Set the mode according to the users' request. Normally set \blacksquare at the center.



3. Adjust RV5 (IRIS SET)/PS-173 board so that the white level at TEST OUT terminal is $700 \pm 10 \text{ mV}$.



■ Note

After this adjustment is completed, set the iris control AUTO/MANU switch (Lens) at "MANU" and OUTPUT/DCC switch (side panel) at "CAM/OFF".

Step 51. LOW VIDEO Adjustment

■ Setting

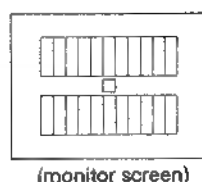
Object : Grayscale chart	Equipment : Waveform monitor
--------------------------	------------------------------

■ Preparation

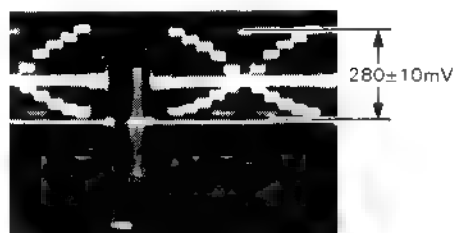
ENC/RGB switch (side panel) → "ENC"

■ Adjustment procedures

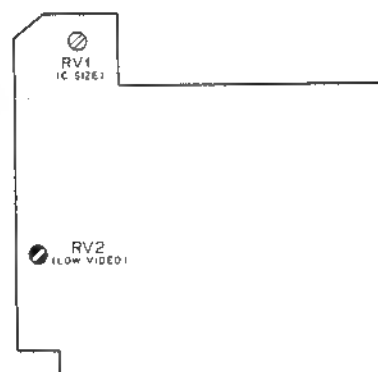
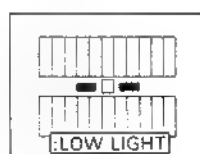
1. Adjust the zoom control so that the grayscale chart frame touches the underscanned picture frame on the monitor



2. Adjust the iris control so that the white level at TEST OUT terminal is 280 ± 10 mV.



3. Turn RV2 (LOW VIDEO)/AT-52A board from the leftmost position clockwise slowly until the "LOW LIGHT" is displayed on the VF screen.



AT-52A BOARD(SOLDERING SIDE)

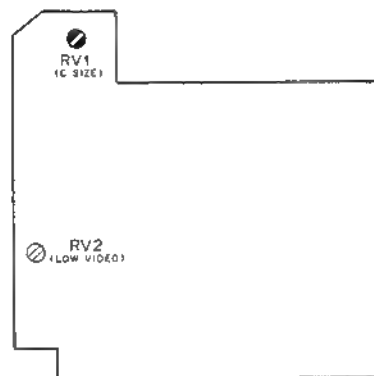
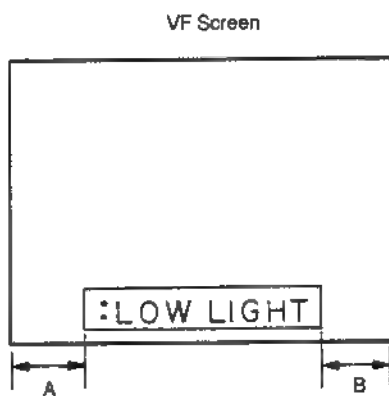
Step 52. Character Size Adjustment

■ Preparation

OUTPUT/DCC switch (side panel) → "CAM/OFF"
 ENC/RGB switch (side panel) → "ENC"
 Lend iris → Close "C"

■ Adjustment procedures

Test point : Viewfinder screen
 Adj. point : Ⓐ RV1 (CHR SIZE)/AT-52A board
 Spec. : A = B



AT-52A BOARD (SOLDERING SIDE)

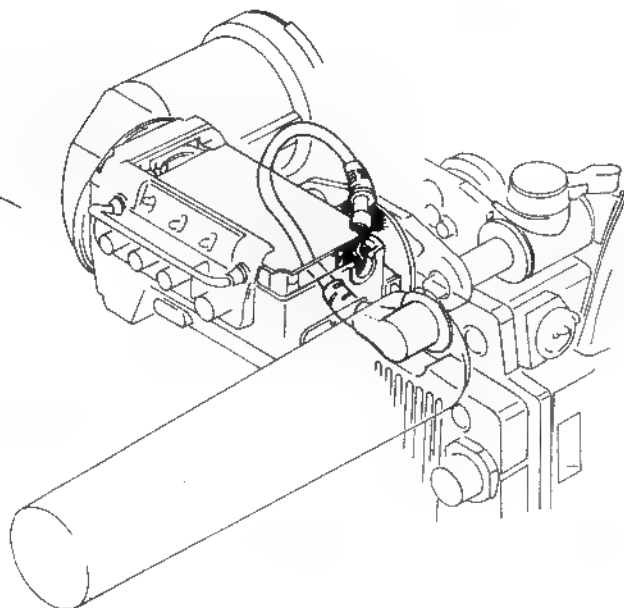
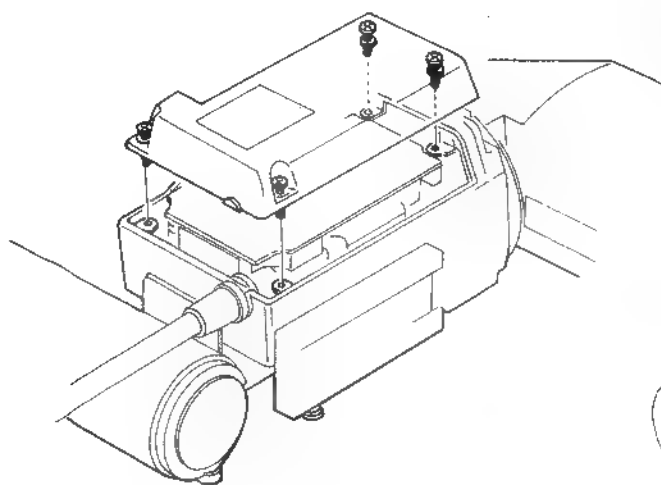
Step 53. Preparation for Viewfinder System Adjustment

■ Note

Be sure to adjust the camera completely, or the following adjustments will become invalid.

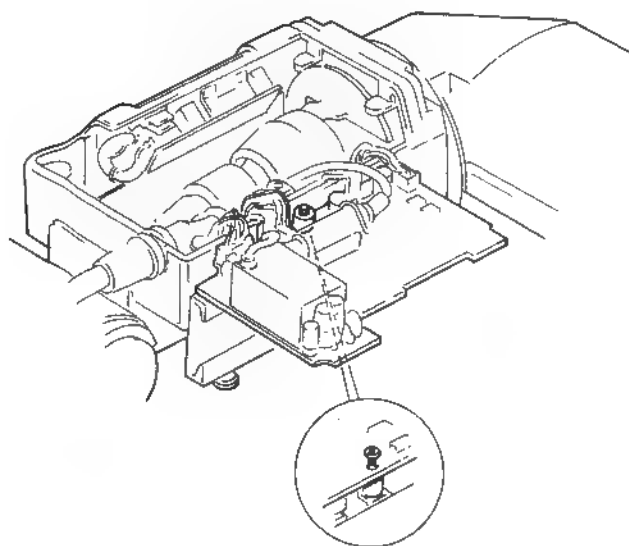
■ Preparation

1. Set the power switch of AC Adaptor (AC-500CE or CMA-8CE) to "OFF".
2. Remove the viewfinder from the camera and remove the VF cover.
4. Turn the component side of VF-39 board upwards for adjustments as shown below.



3. Install the viewfinder to be turned upside shown on the camera.

5. Set the power switch of AC adaptor (AC-500CE or CMA-8CE) to "ON".



Step 54. Vertical Hold Adjustment

■ Setting

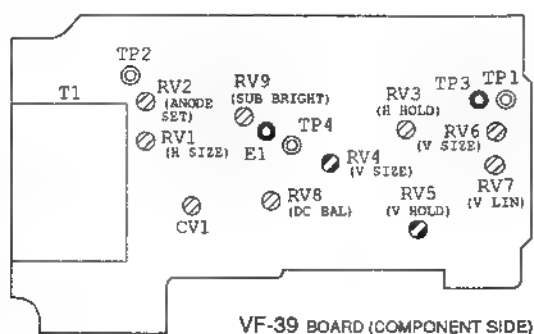
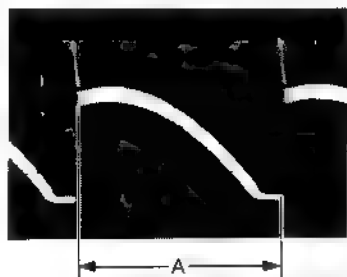
Equipment : Oscilloscope

■ Preparation

- Pull the EN-69P board out of the camera.
- Set **●** RV4 (V SIZE)/VF-39 board to the mechanical center unless it is marked.

■ Adjustment procedures

Test point : TP3 (GND:E1)/VF-39 board
 Adj. point : **●** RV5 (V HOLD)/VF-39 board
 Spec. : $A = 25.6 \pm 0.5 \text{ mS}$



■ Note

After this adjustment is completed, insert the EN-69P board into the camera.

Please read BVP-7/7P as BVP-7000HS/7000HSP.
 Some illustrations and specifications are different from BVP-7000HS/7000HSP in this manual.

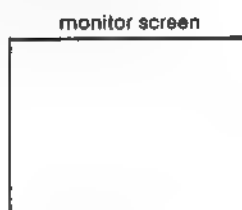
Step 55. Horizontal Hold Adjustment

■ Setting

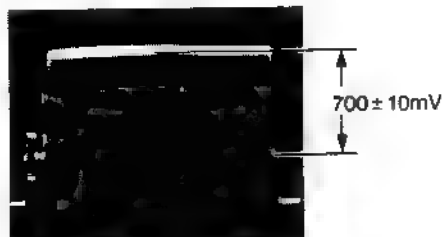
Object : White window chart	Trigger : CH2/oscilloscope
Equipment : Oscilloscope, Waveform monitor	

■ Preparation

1. Adjust the zoom control so that the white window frame touches the underscanned picture frame on the monitor screen.

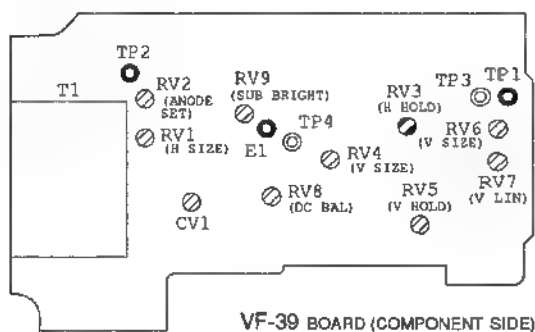
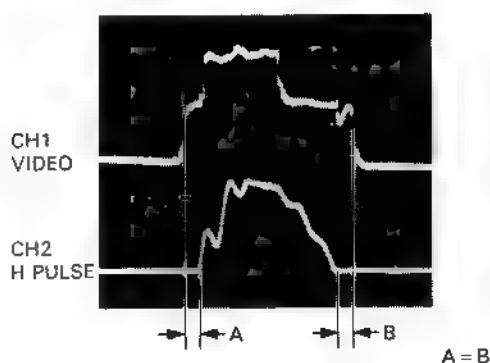


2. Adjust the iris control so that the white level at TEST OUT terminal is 700 ± 10 mV.



■ Adjustment procedures

Test point : CH1 TP2 (GND:E1)/VF-39 board
 CH2 TP1 (GND:E1)/VF-39 board
 Adj. point : ● RV3 (H HOLD)/VF-39 board
 Spec. :



Step 56. DC Balance Adjustment

■ Setting

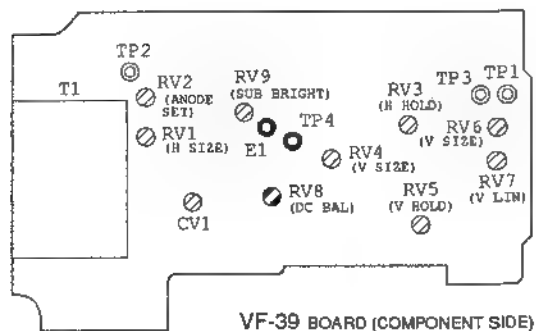
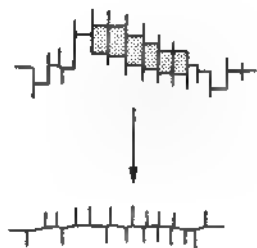
Equipment : Oscilloscope	CAM/BARS : BARS
--------------------------	-----------------

■ Adjustment procedures

Test point : TP4 (GND:E1)/VF-39 board

Adj. point : ● RV8 (DC BALANCE)/VF-39 board

Spec. : Make the waveform only to a mustache shape.



Step 58. Focus Adjustment

■ Note

Step 59. Picture Frame Adjustment and this adjustment affect each other. Repeat these adjustments until both specifications are satisfied.

■ Setting

Object : Resolution chart

Equipment : Waveform monitor

■ Preparation

Iris control AUTO/MANU switch (Lens) → "MANU"

BRIGHT control (viewfinder) → mechanical center

CONTRAST control (viewfinder) → fully clockwise

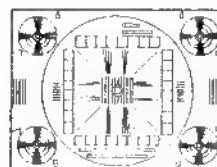
PEAKING control (viewfinder) → fully counterclockwise

■ Adjustment procedures

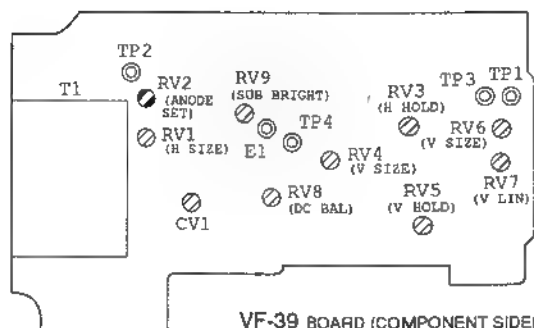
1. Adjust the zoom control so that the resolution chart touches the underscanned picture frame on the monitor.
2. Adjust the iris control so that the peak level at TEST OUT terminal is 100 ± 2 IRE.



Monitor screen



3. Turn the RV2/VF-39 substrate to the leftmost position and then slowly turn it to the right so that a VF image is focused at the best point.
(Note: turn slowly.)



■ Note

After the adjustment has been completed, confirm that a focus can be achieved regardless of positions where the BRIGHT and CONTRAST volumes are set.

Please read BVP-7/7P as BVP-7000HS/7000HSP.
Some illustrations and specifications are different from BVP-7000HS/7000HSP in this manual.

Step 59. Picture Frame Adjustment

■ Note

Step 58. Focus Adjustment and this adjustment affect each other. Repeat these adjustments until both specifications are satisfied.

■ Setting

Object : Resolution chart

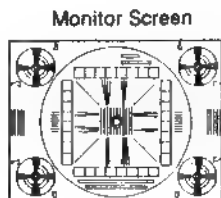
Equipment : Waveform monitor

■ Preparation

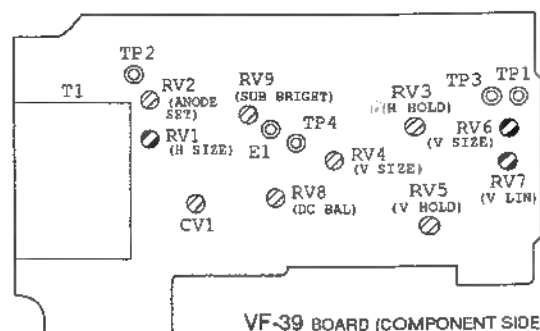
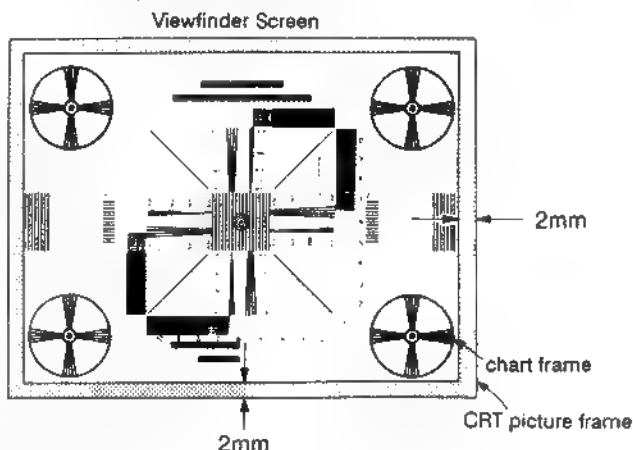
1. **BRIGHT** control (viewfinder) → mechanical center
CONTRAST control (viewfinder) → mechanical center
PEAKING control (viewfinder) → mechanical center
2. Remove the eye cap from the viewfinder.

■ Adjustment procedures

1. Adjust the zoom control so that the resolution chart frame touches the underscanned picture frame on the monitor screen. Adjust the iris control so that the white level at TEST OUT terminal is 700 ± 10 mV.



2. Adjust \odot RV7 (V LIN)/VF-39 board so that the distortion of each circle at the four corners of resolution chart is minimized.
3. Adjust \odot RV1 (H SIZE)/VF-39 board so that the H size of resolution chart is underscanned by approx. 2mm from the CRT picture frame.
4. Adjust \odot RV6 (V SIZE)/VF-39 board so that the V size of resolution chart is underscanned by approx. 2mm from the CRT picture frame.



5. Adjust the centering magnet of the deflection coil so that the center of resolution chart is located at the center of VF screen.
6. Adjust the centering magnet of the deflection coil so that the resolution chart is located in the center of VF screen.
7. Repeat item 2 to item 6 until the specifications are satisfied.

Step 60. Peaking Adjustment

- **Setting**

Resolution Chart

■ Preparation

Remove eye cup.

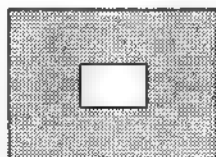
PEAKING volume/view finder → Return about 10 degrees to the left from the rightmost position.

BRIGHT volume/view finder \longrightarrow mechanical center

CONTRAST volume/view finder → mechanical center

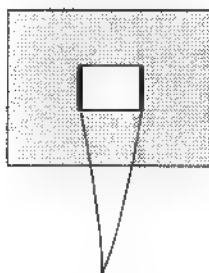
- Adjustment procedures

1. Take a photograph of a white window chart and adjust a white peak of a VIDEO OUT 1 terminal through a lens diaphragm so that it has 50 IRE.

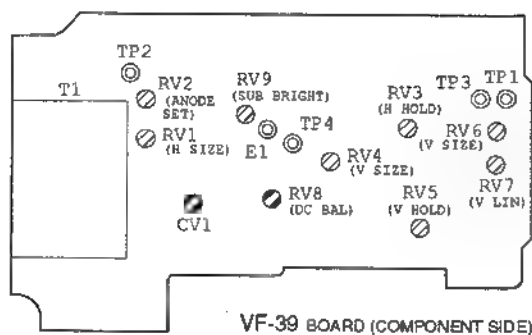


2. Make the peaks of the edges equal by using the  CV1/VF-39 substrate and the  RV8/VF-39 substrate together.

picture of view finder



Make the peaks of the edges equal.



4-3. PARTIAL ADJUSTMENT

Adjustments for the BVP-7P are done in six steps. See page 4-12 for details.

- Power supply system adjustment
- Synchronizing signal system adjustment
- Video signal system adjustment
- Detail signal system adjustment
- Automatic control system adjustment
- Viewfinder system adjustment

Partial adjustment is useful for each step except following adjustment.

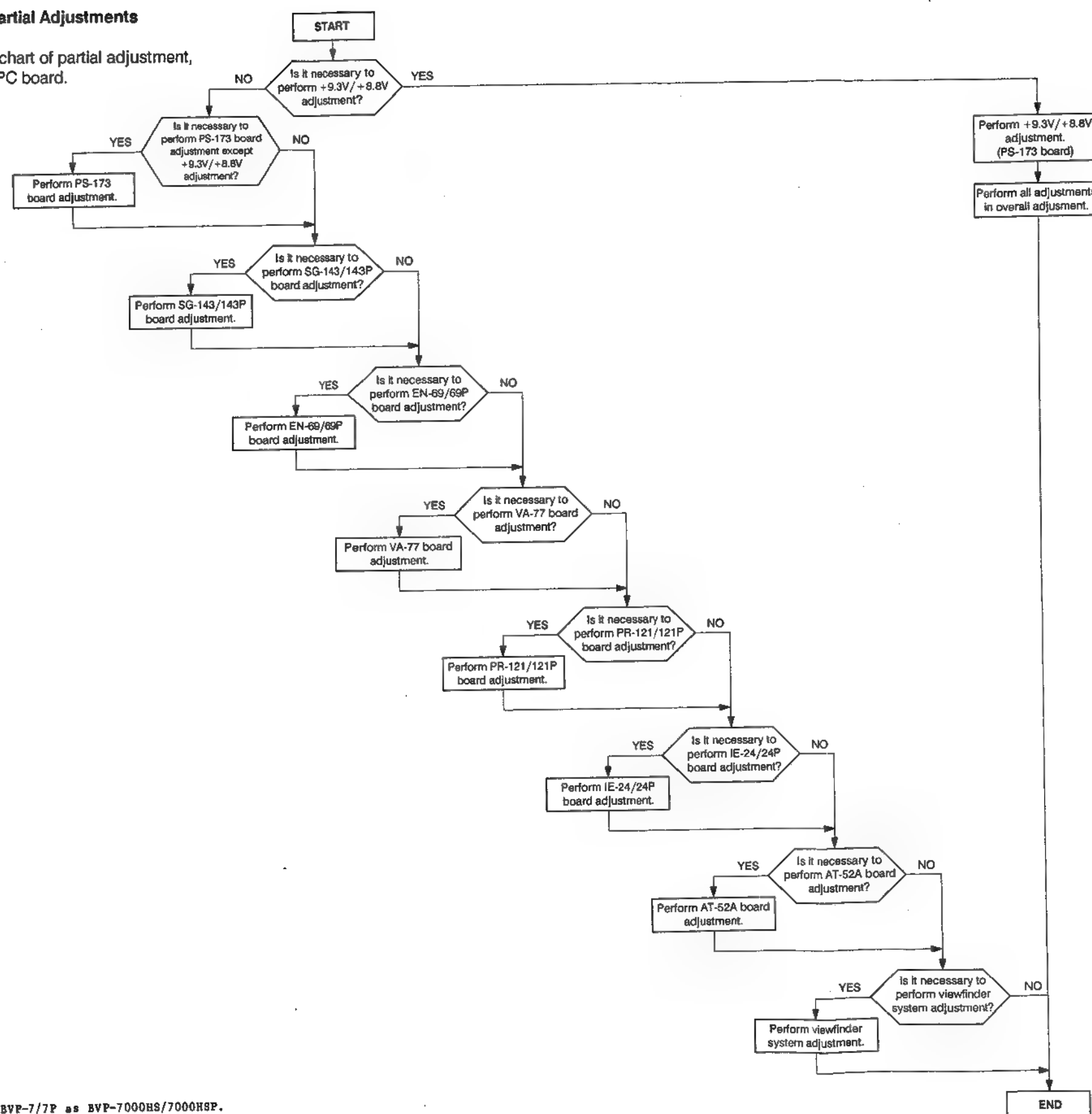
- * +9.3V/8.8V Adjustment (Power supply system)
When this adjustment is done, be sure to perform all adjustments in Section 4-2 "OVERALL ADJUSTMENT".

Before beginning the partial adjustments, refer to following sections.

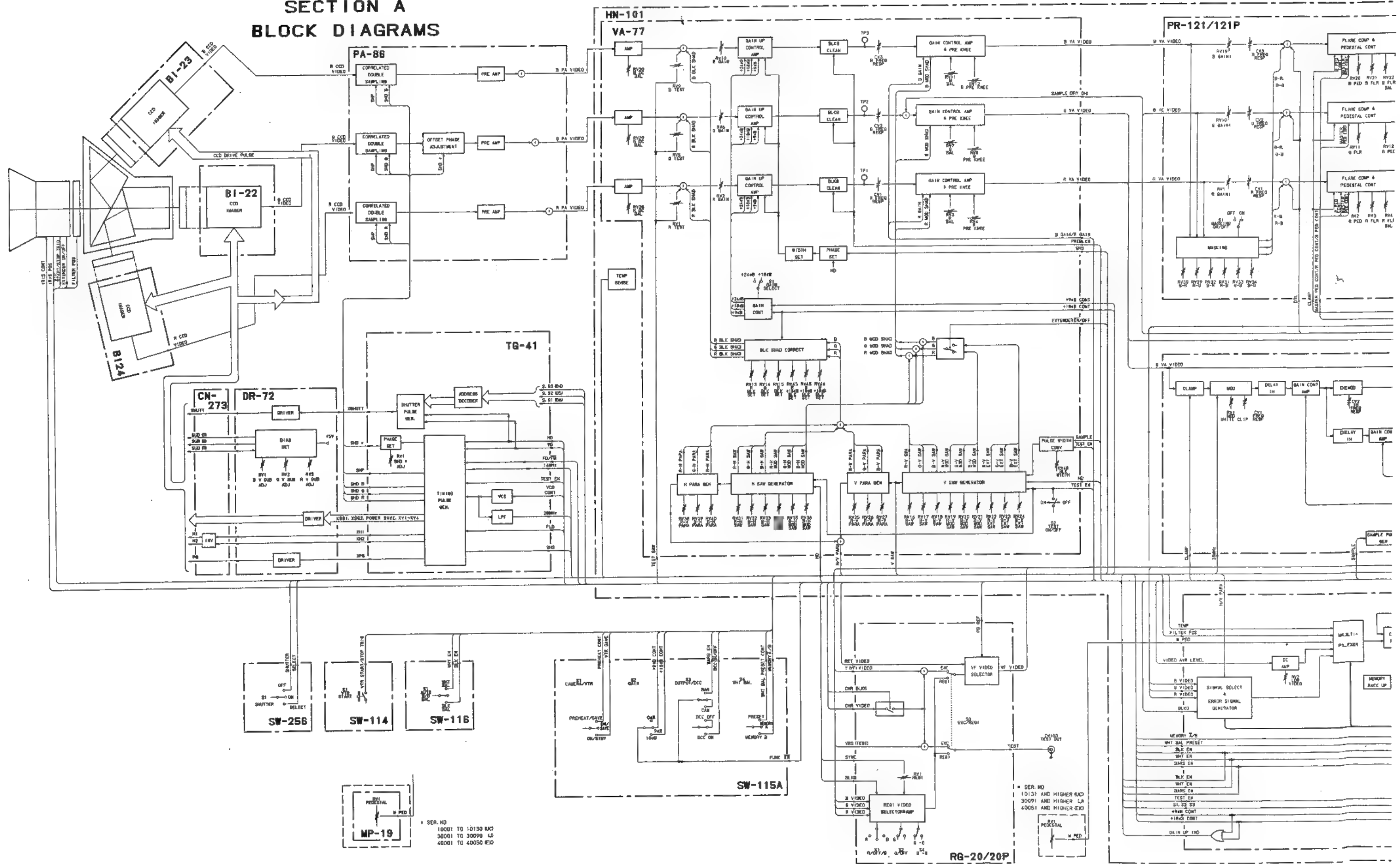
- 4-1-2. Connection and Initial setting
- 4-1-3. Precautions on adjustments

4-3-1. Flowchart of Partial Adjustments

Figure 4-1 shows a flowchart of partial adjustment, which is done for each PC board.



SECTION A BLOCK DIAGRAMS



BVP-7 (J) 1-R6
BVP-7 (UC) 1-R6
BVP-7P (EK) 1-R5

A-1

B

C

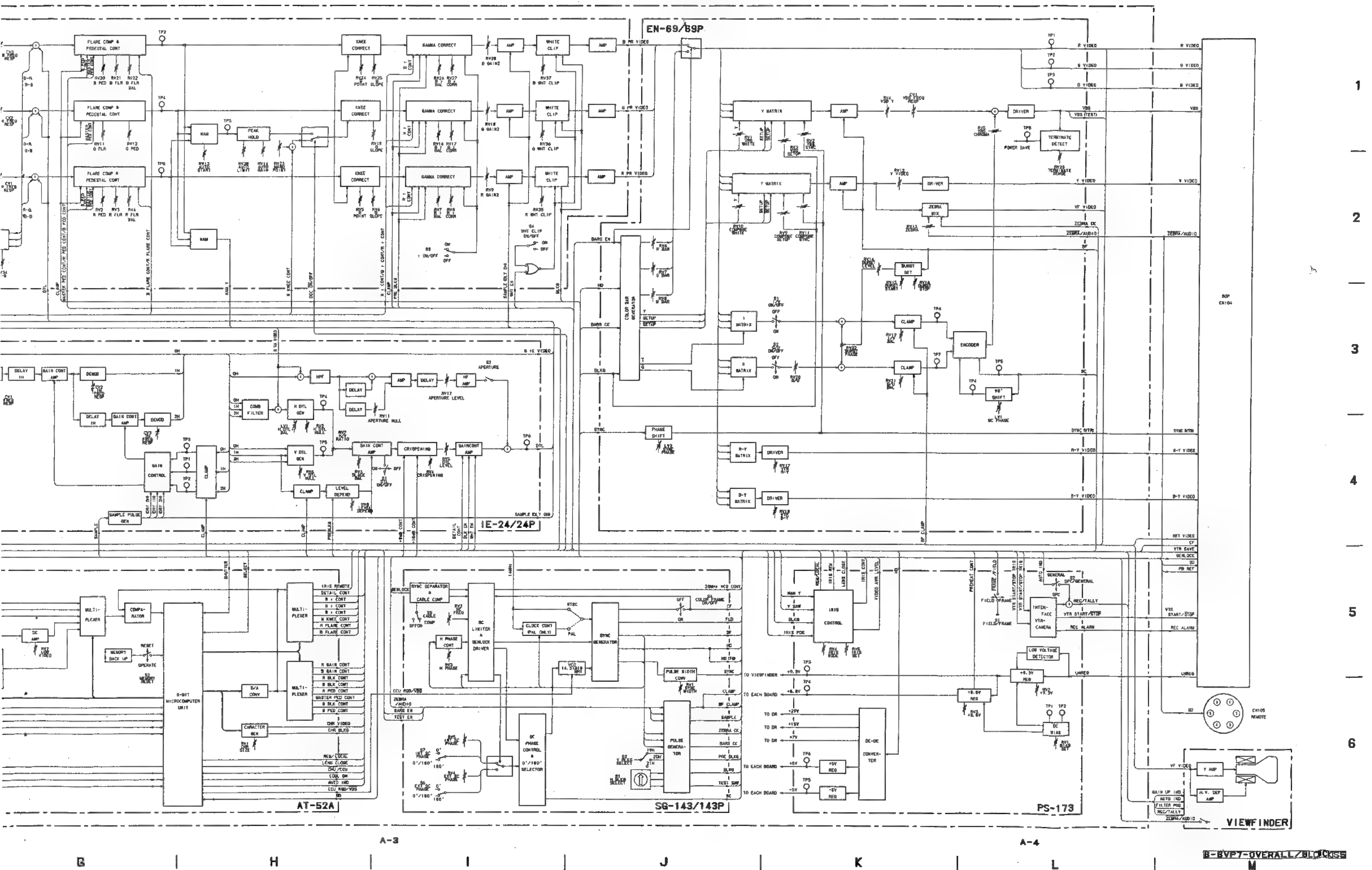
D

E

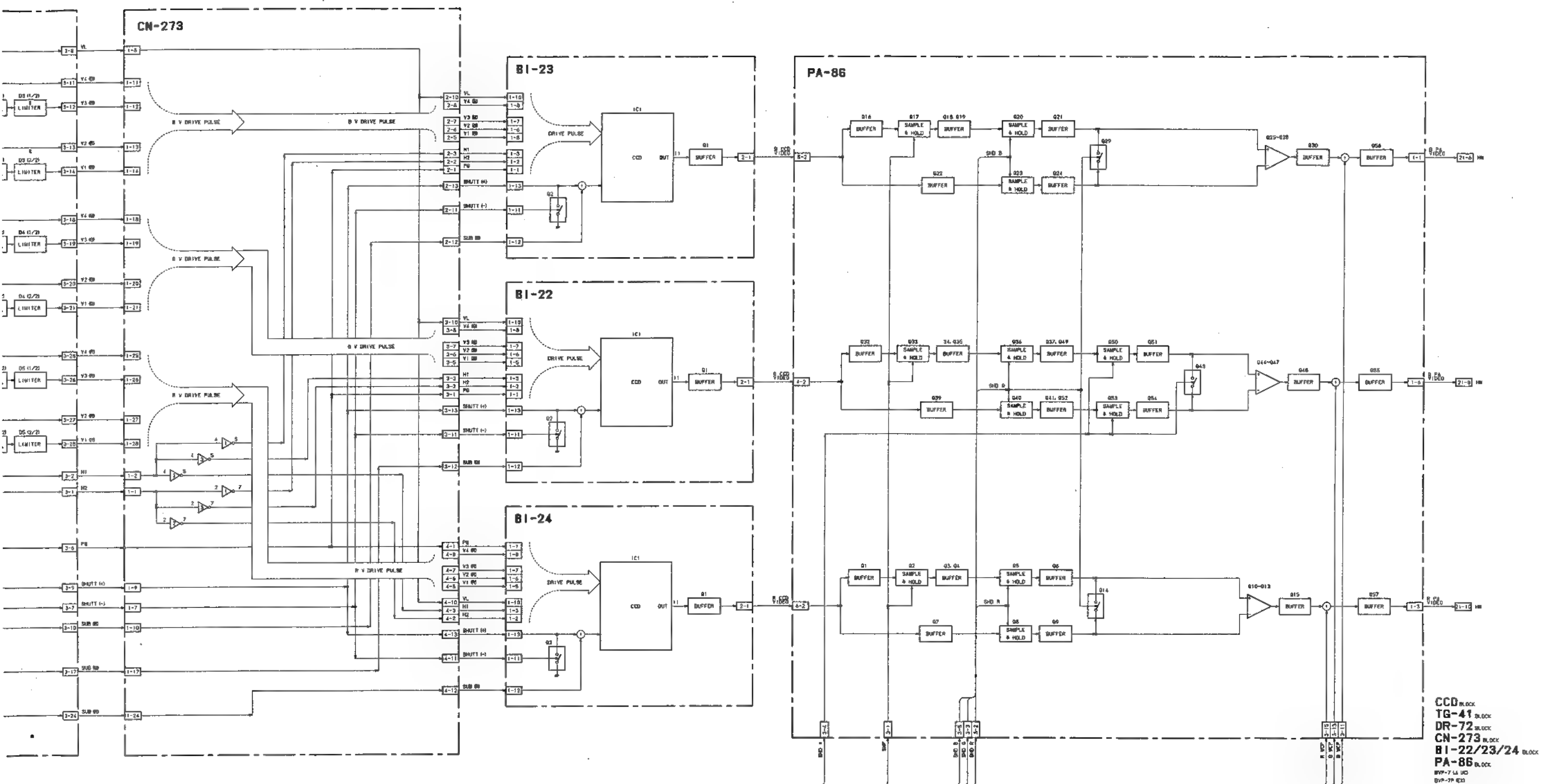
A-2

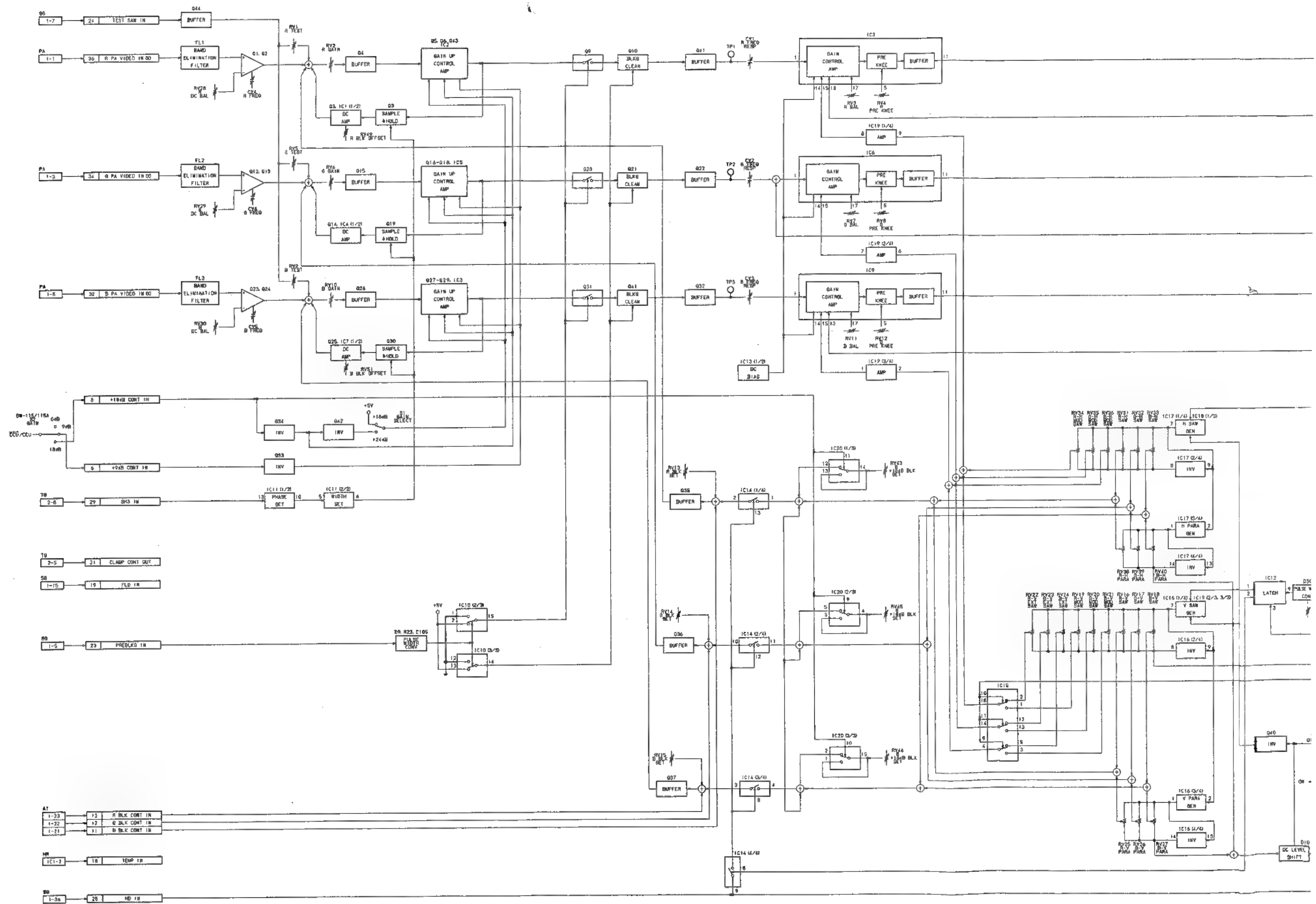
F

G

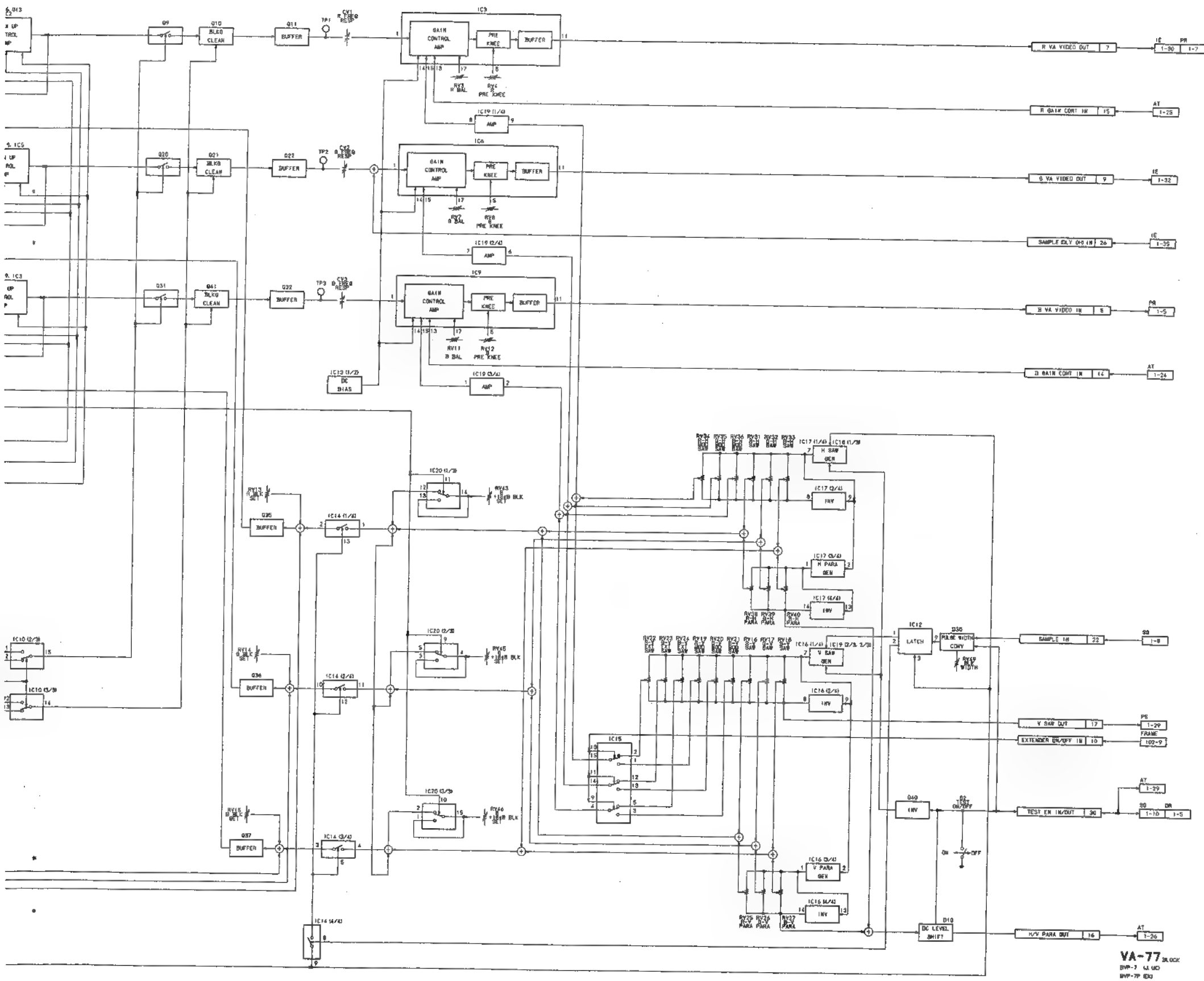


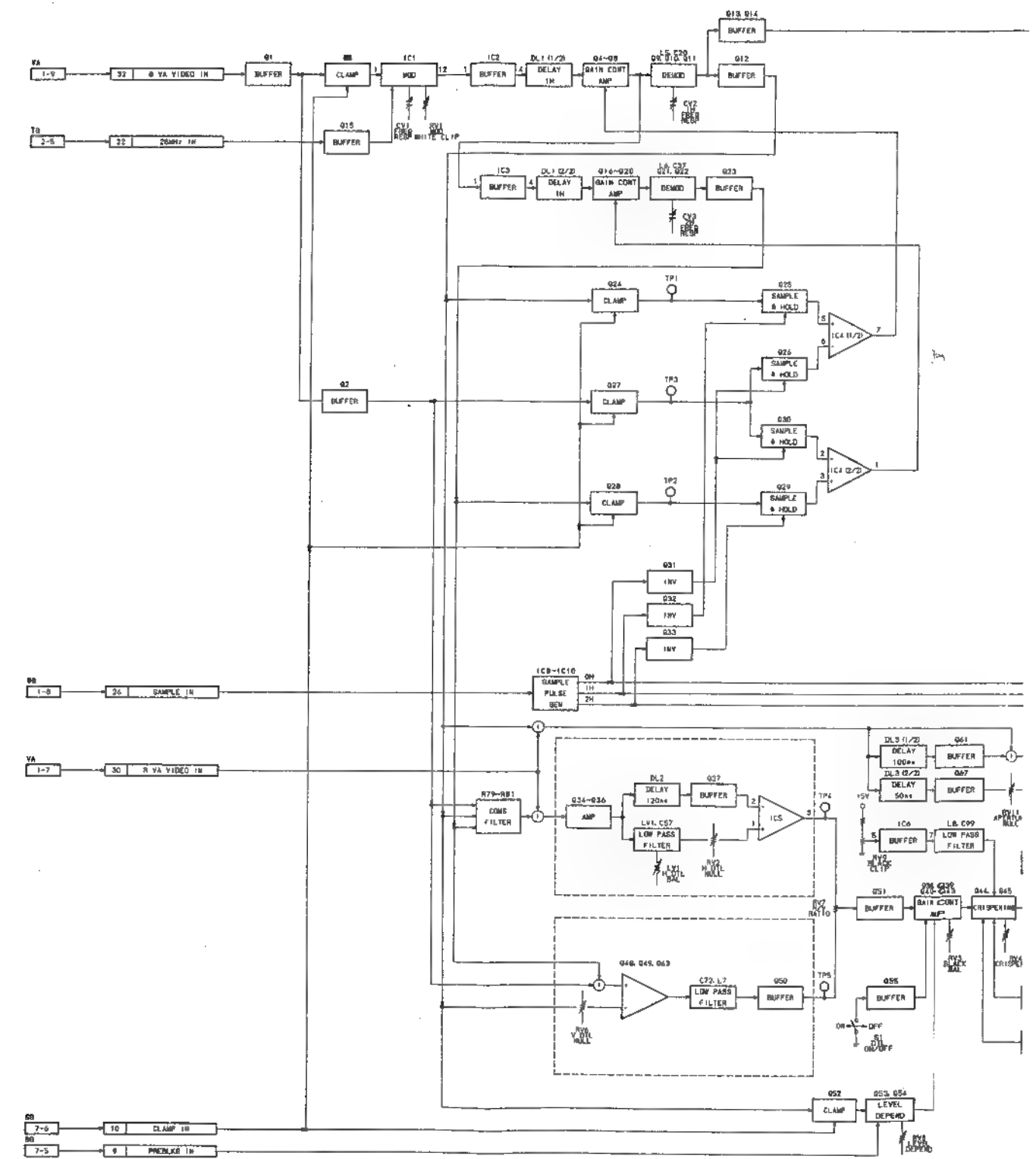


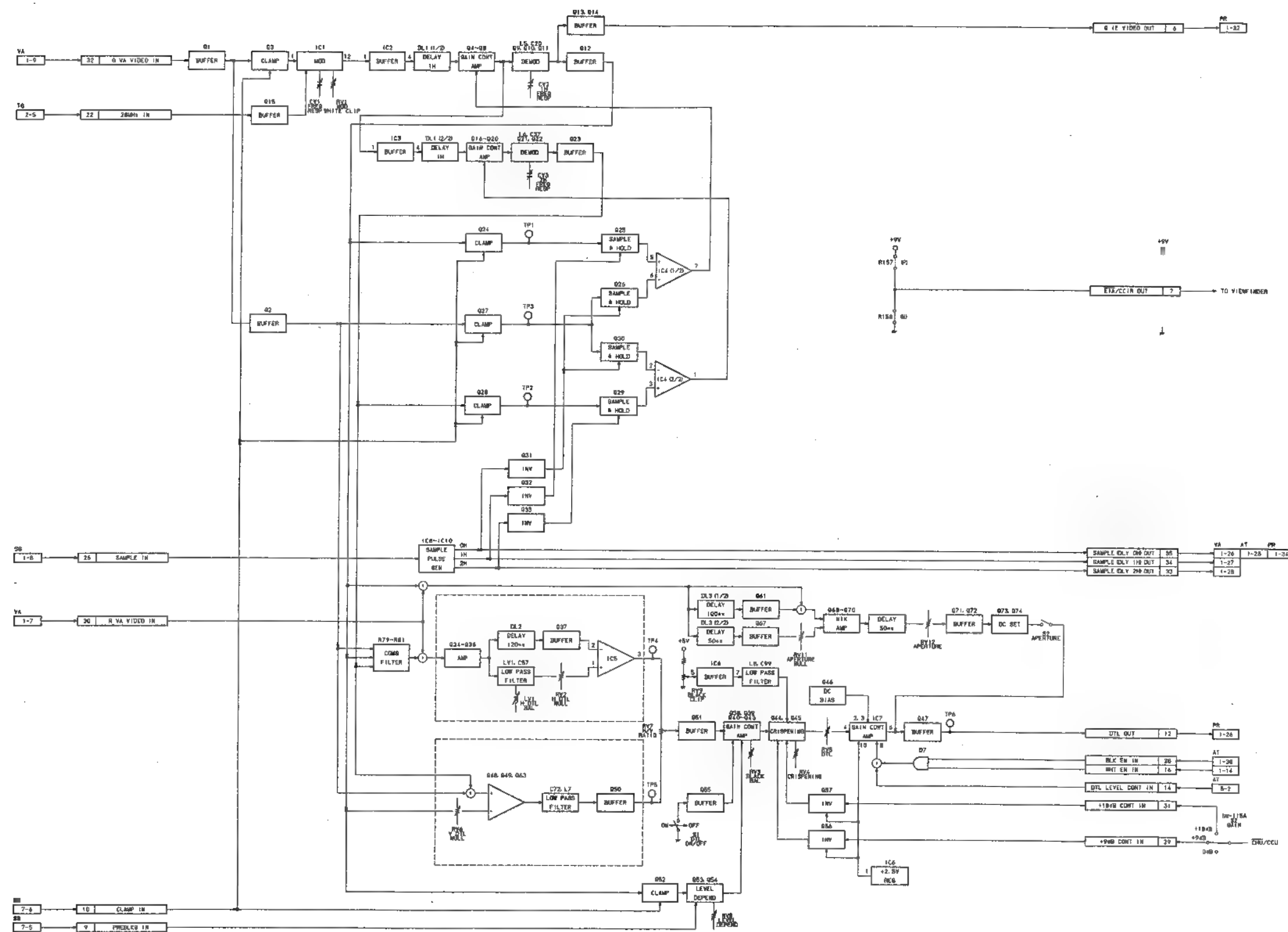




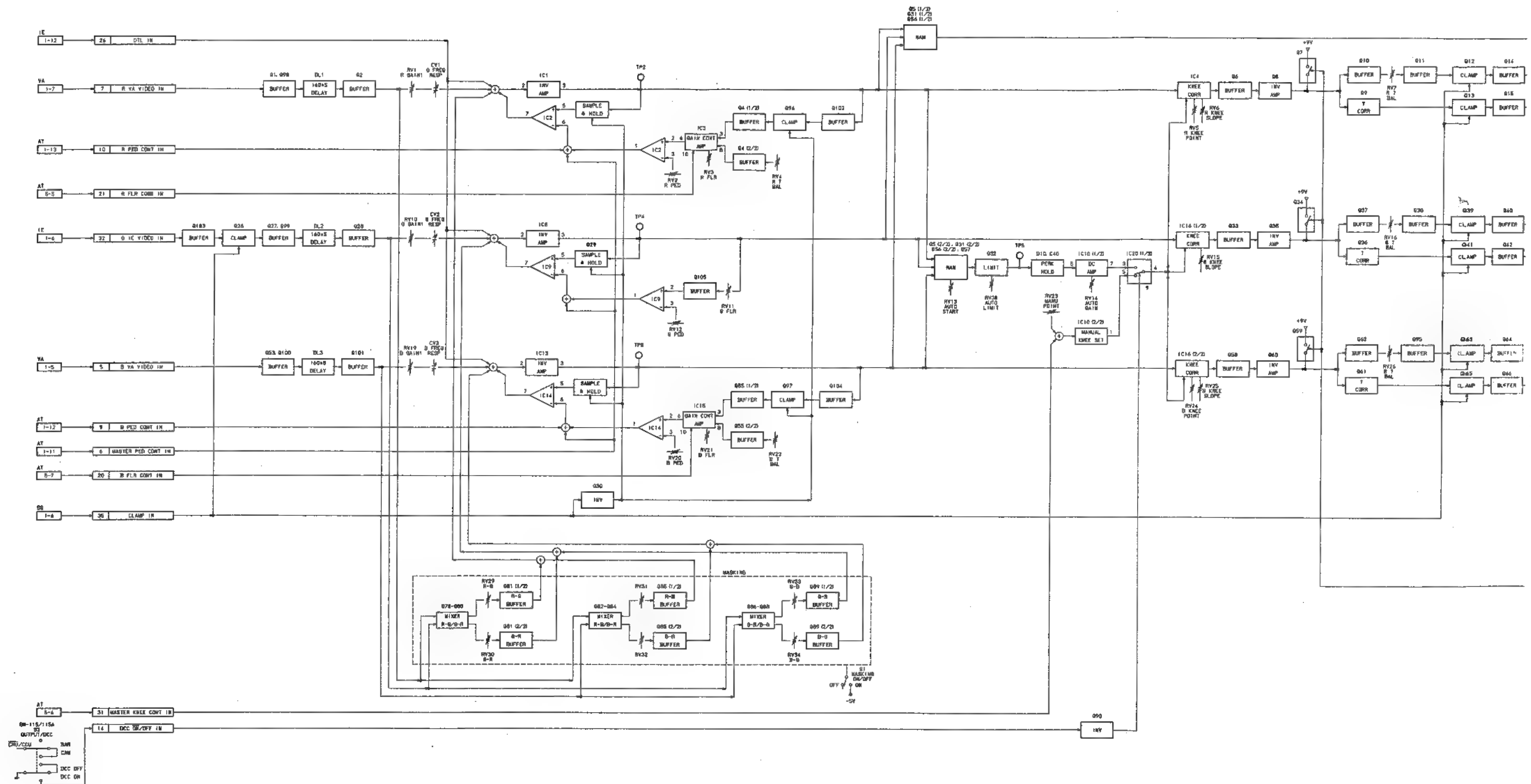
BVP-7 (J) 1-R7
 BVP-7 (UC) 1-R7
 BVP-7P (EK) 1-R6
 BVP-7000HS (J) 1-R2
 BVP-7000HS (UC) 1ST
 BVP-7000HSP (EK) 1ST







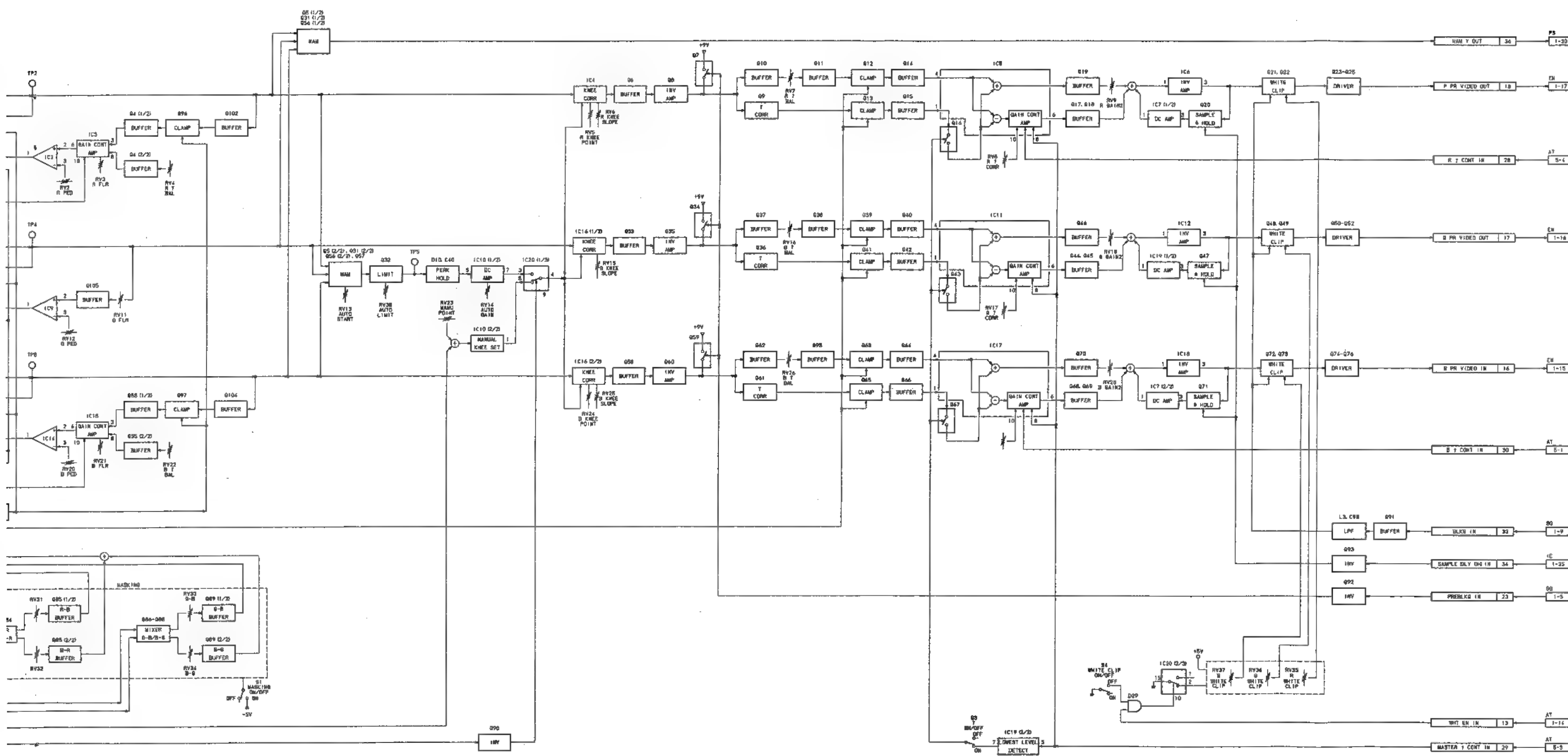
BVP-7 (J) 1-R6
 BVP-7 (UC) 1-R6
 BVP-7P (EK) 1-R5
 BVP-7000HS (J) 1-R1
 BVP-7000HS (UC) 1ST
 BVP-7000HSP (EK) 1ST

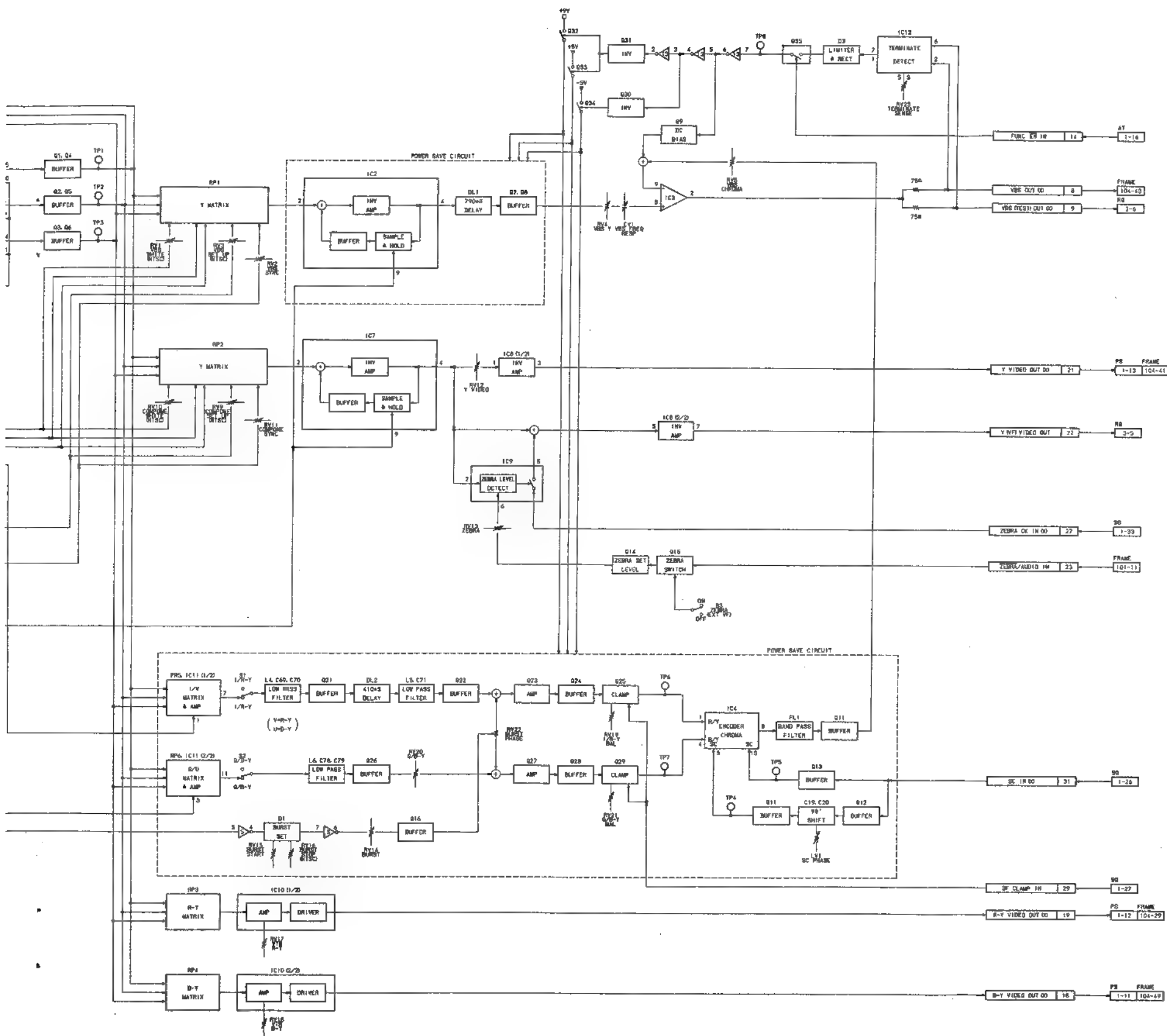


BVP-7 (J) 1-R6
BVP-7 (UC) 1-R6
BVP-7P (EK) 1-R5
BVP-7000HS (J) 1-R1
BVP-7000HS (UC) 1ST
BVP-7000HSP (EK) 1ST

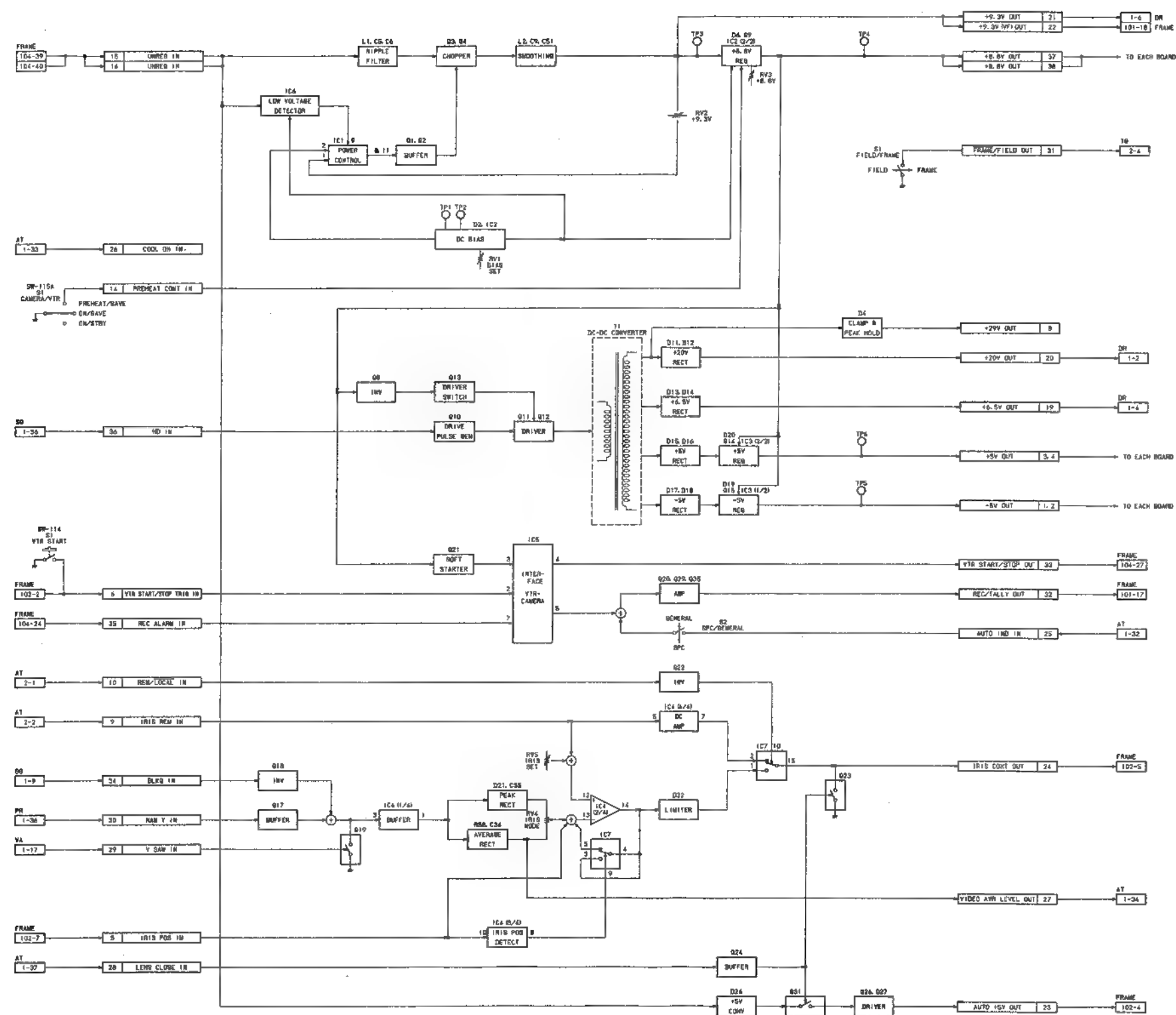
A-15

A-16

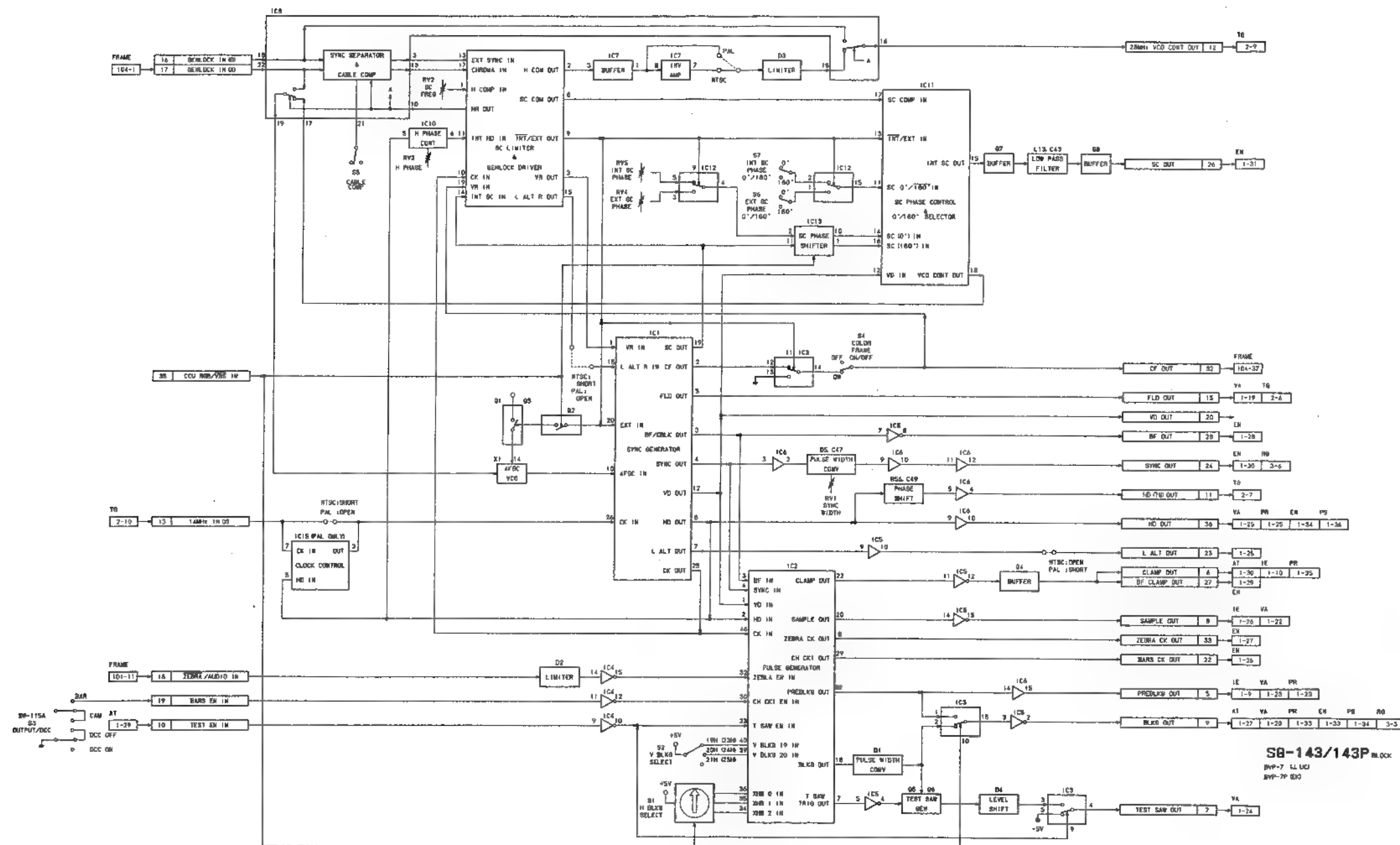


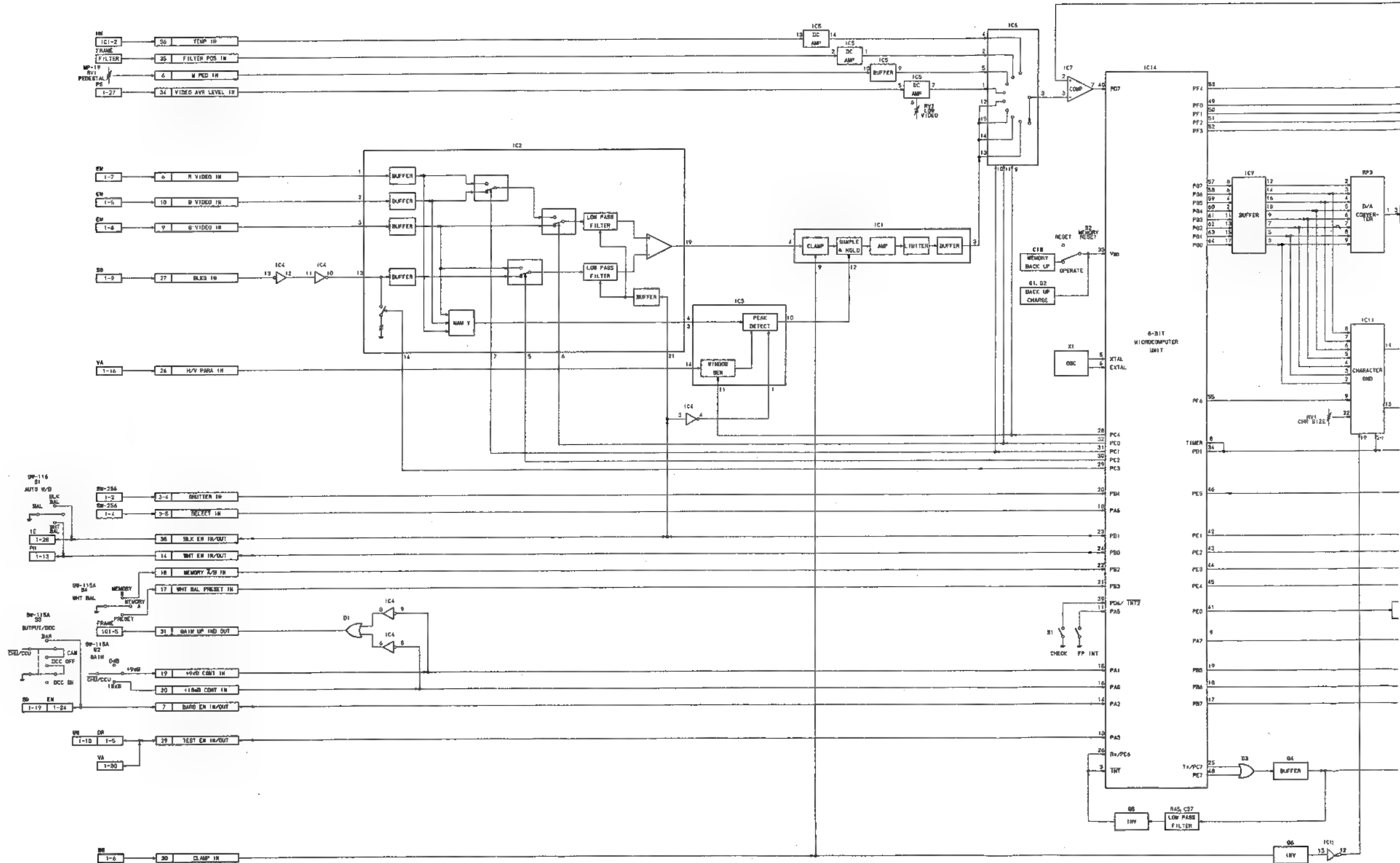


BVP-7 (J) 1-R6
 BVP-7 (UC) 1-R6
 BVP-7P (EK) 1-R5
 BVP-7000HS (J) 1-R1
 BVP-7000HS (UC) 1ST
 BVP-7000HSP (EK) 1ST

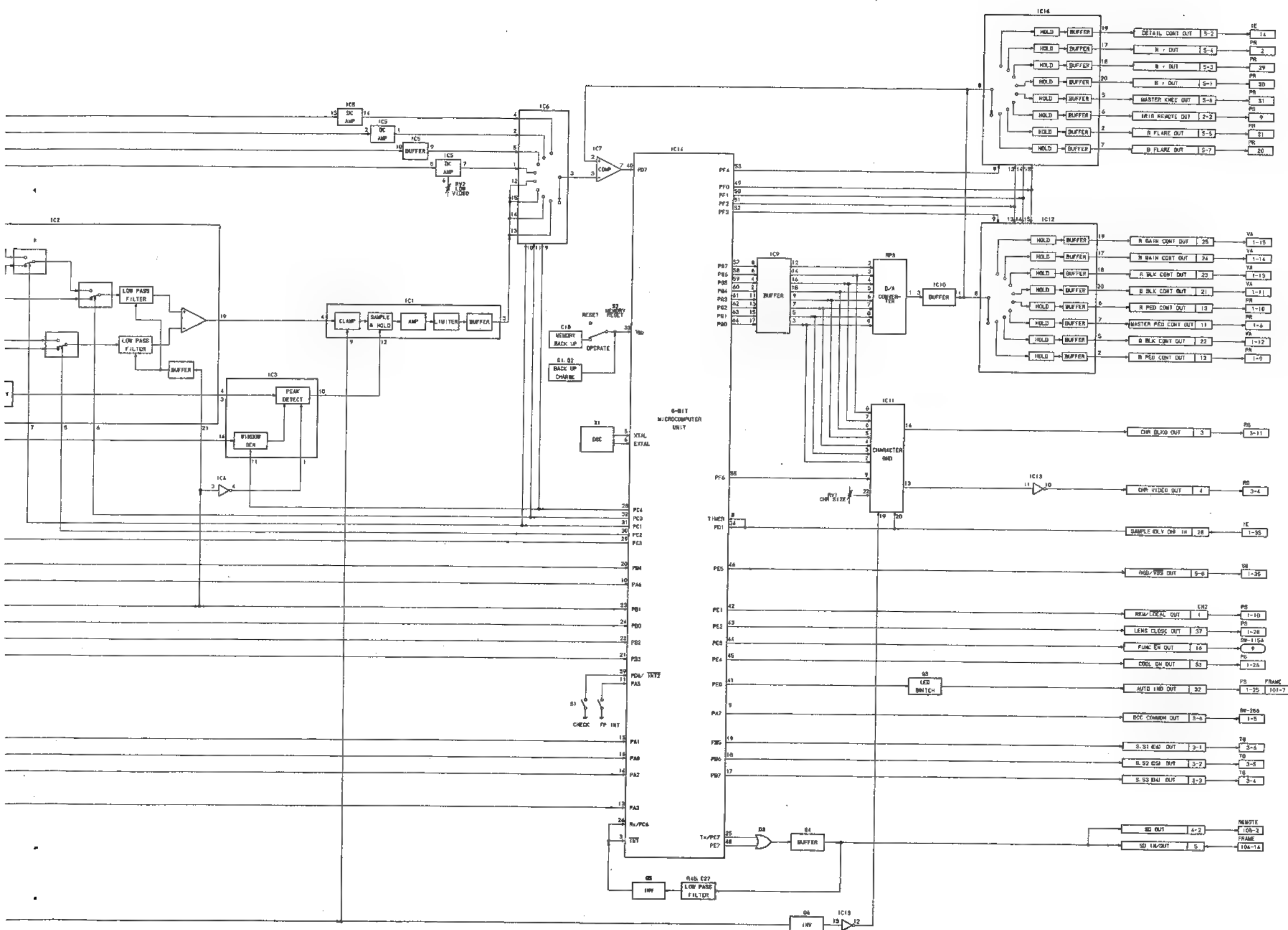


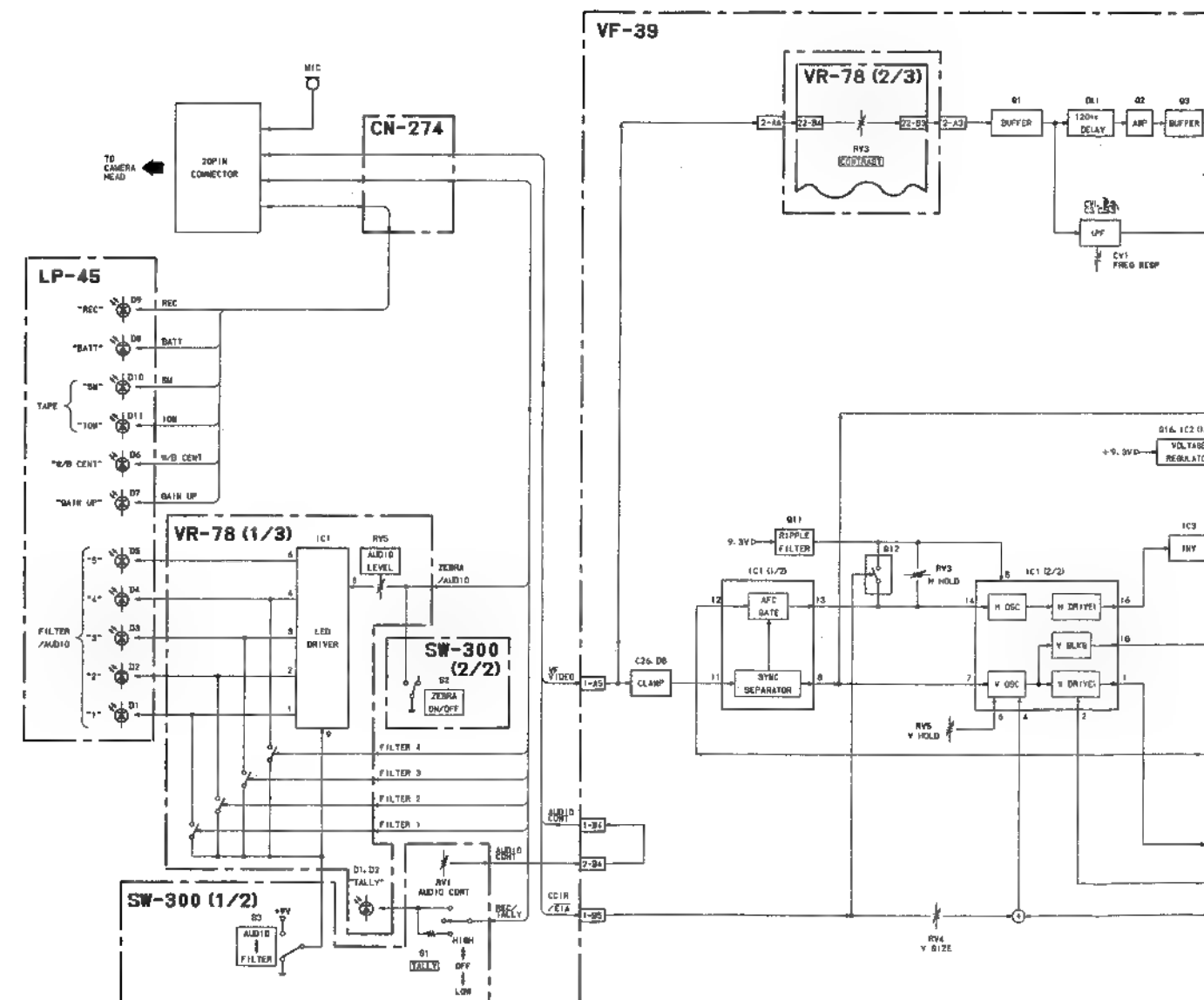
BVP-7 (J) 1-R6
 BVP-7 (UC) 1-R6
 BVP-7P (EK) 1-R5
 BVP-7000HS (J) 1-R1
 BVP-7000HS (UC) 1ST
 BVP-7000HSP (EK) 1ST

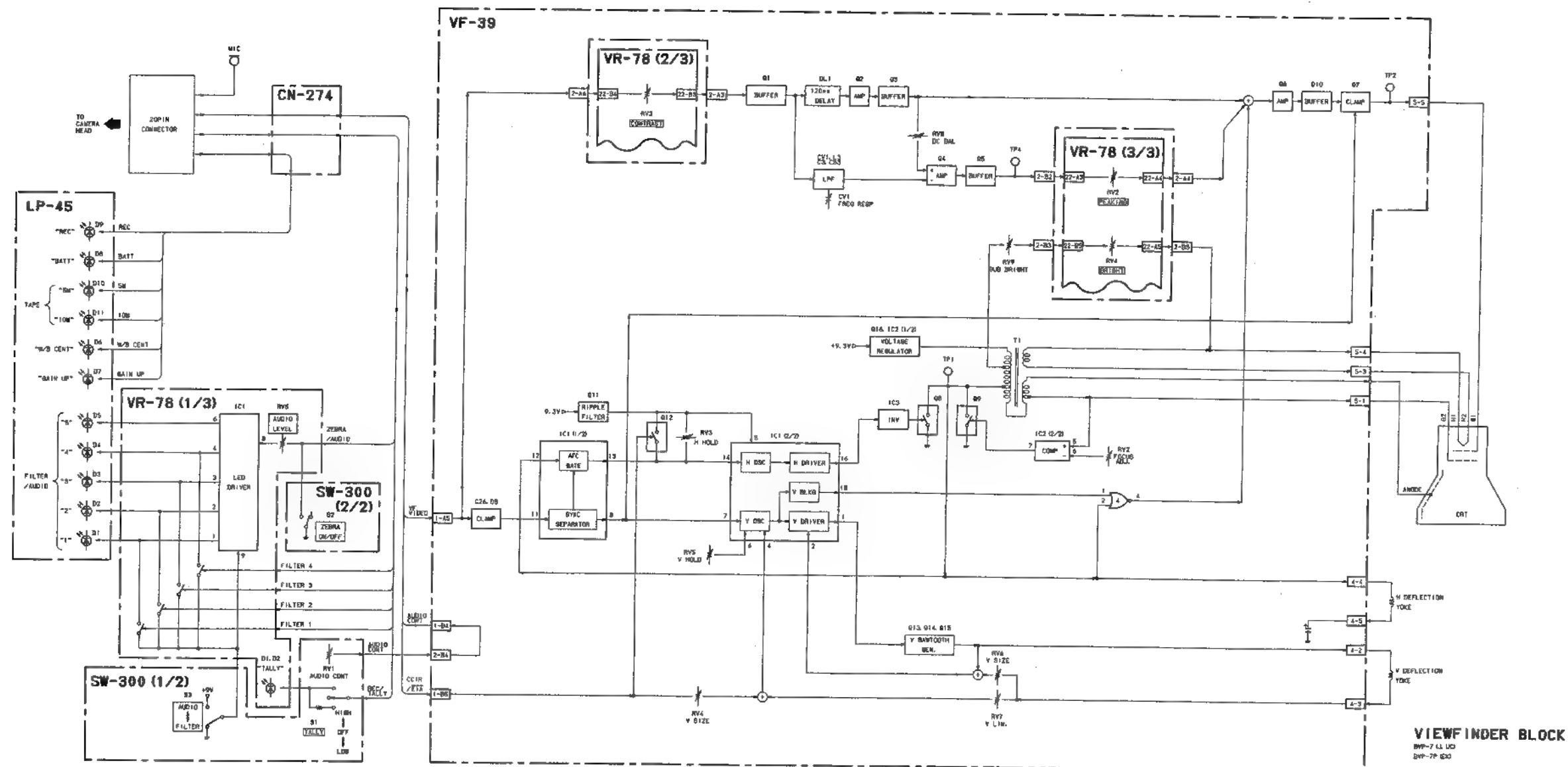




BVP-7 (J) 1-R6
BVP-7 (UC) 1-R6
BVP-7P (EK) 1-R5
BVP-7000HS (J) 1-R1
BVP-7000HS (UC) 1ST
BVP-7000HSP (EK) 1ST







BVP-7 (J) 1-R6
 BVP-7 (UC) 1-R6
 BVP-7P (EK) 1-R5
 BVP-7000HS (J) 1-R1
 BVP-7000HS (UC) 1-ST
 BVP-7000HSP (EK) 1ST

SECTION B SEMICONDUCTOR

The circuit diagram of IC is obtained from the IC data book published by the manufacturer.

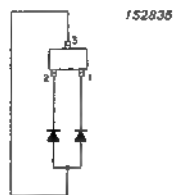
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1S1555.....B-2		BX1179.....B-4		NIM2369.....B-2	
1S1555-S.....B-2		BX1338.....B-5		OP-07DPS.....B-12	
1S2835.....B-2		BX1339A.....B-5		SBX1516-01...B-13	
1S2837.....B-2		BX1356.....B-5		SBX1525-01...B-13	
1SS119.....B-2		CX22017.....B-5		SN74HC4066NS..B-14	
1SS123.....B-2		CX518.....B-5		TC4011BF.....B-13	
1SS226.....B-2		CX7930A.....B-6		TC4049BF.....B-13	
1SS97-1.....B-2		CX7968A.....B-7		TC4051BF.....B-13	
1SZ46A.....B-2		CX7969.....B-8		TC4053BF.....B-13	
2SA1162.....B-2		CXA1065M....B-10		TC4069UBF.....B-13	
2SA1226.....B-2		CXB0026AM...B-10		TC40H241F....B-14	
2SA1462.....B-2		CXD1361M....B-10		TC4S01F.....B-14	
2SA812.....B-2		DTC144WK....B-2		TC4S11F.....B-14	
2SB624-BV3...B-2		ERA81-005...B-2		TC4S69F.....B-14	
2SB733-4.....B-2		ERB81-004...B-2		TC504013BF...B-14	
2SB739.....B-2		GL5LR40.....B-2		TC50H001F....B-14	
2SB815.....B-2		GL9NG2.....B-2		TC74HC4066F..B-14	
2SC1623.....B-2		GL9PR20.....B-2		TC74HC4538F..B-14	
2SC2712.....B-2		HA11423MP...B-10		TL062ACPS....B-15	
2SC2757.....B-2		HD63P05Y0...B-10		TL064CNS.....B-15	
2SC2757-T33..B-2		HN27C64G-20..B-11		TL494CNS.....B-15	
2SC3360.....B-2		HSM88AS.....B-2		TL7700CPS....B-15	
2SC3661.....B-2		HZ?ALL.....B-2		TLC27L2CPS...B-15	
2SD1048.....B-2		HZ?B?L.....B-2		TLG124A.....B-2	
2SD773-4.....B-2		HZ?BLL.....B-2		TLO124.....B-2	
2SK125-5.....B-2		HZ?C?L.....B-2		TLR124.....B-2	
2SK300.....B-2		HZ?CLL.....B-2		U05G.....B-2	
2SK612.....B-2		LB1423N.....B-11		μPC311G2.....B-15	
2SK94-X2.....B-2		MC74HC4053F..B-12		μPC358G2.....B-15	
2SK94-X3.....B-2		MN1237AD.....B-12		V09G.....B-2	
3SK163-2.....B-2		NJM1496M....B-12		V11N.....B-2	
AN6701S.....B-3		NJM2903M....B-12		XN6501.....B-2	
BH1210.....B-3		NJM2904M....B-12		XN6435.....B-2	
BH1211.....B-3				XN6534.....B-2	
BH1212A.....B-3					
BH1217.....B-3					
BH1219A.....B-3					
BH1220.....B-4					
BH1221.....B-4					

DIODE, TRANSISTOR

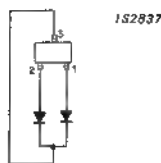


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1S1555S
1S1119

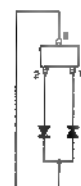
TOP VIEW (SCALE 4/1)



TOP VIEW (SCALE 4/1)



TOP VIEW (SCALE 4/1)



1S5123
1S5226
HSM88A5



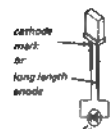
1S897-1
ER481-005
ER881-004



1S246A



GL-5LR40; RED



GL9NG2; YELLOWISH GREEN
GL9PR20; RED



TLG124A; GREEN
TLO124; ORANGE
TLR124; RED

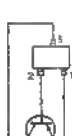


UD5G
UD9G
V117



HZ7ALL
HZ7B7L
HZ7BLL
HZ7C7L
HZ7CLL

TOP VIEW (SCALE 4/1)



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2SA1462
2SAB12
2SB624
2SB815

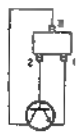


2SB733



2SB739

TOP VIEW (SCALE 4/1)



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2SC2757
2SC3360
2SC3681
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NTM2389

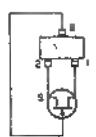


2SD773



2SK125

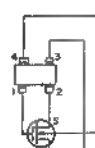
TOP VIEW (SCALE 4/1)



2SK300
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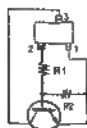


2SK612

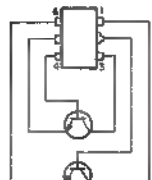


3SK163

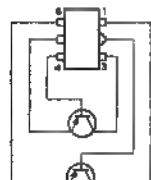
TOP VIEW (SCALE 4/1)



DTC144WK (R1=47K, R2=22K)

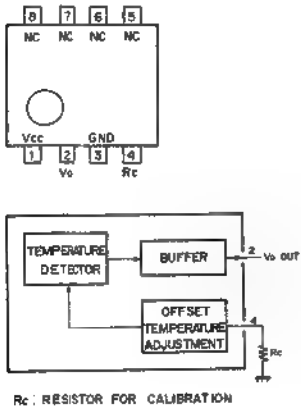


XN6501
XN6534

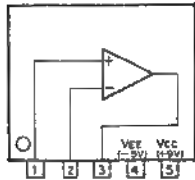


XN6435

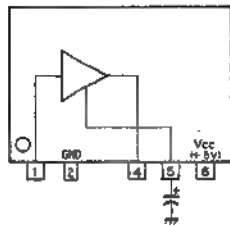
AN6701S (MATSUSHITA) FLAT PACKAGE
TEMPERATURE SENSING
— TOP VIEW —



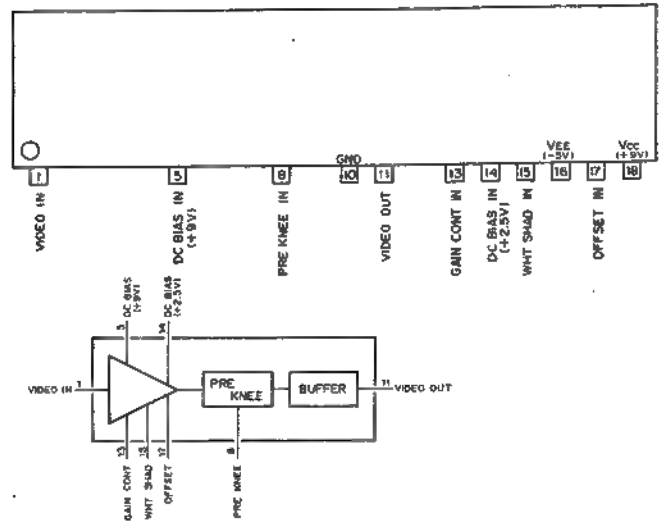
BH1210 (SONY)
VIDEO AMPLIFIER
— PRINTED SIDE VIEW —



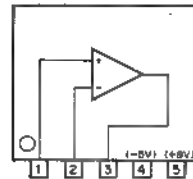
BH1211 (SONY)
VIDEO DRIVER
— PRINTED SIDE VIEW —



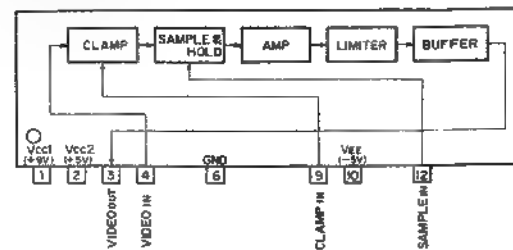
BH1212A (SONY)
GAIN CONT. AMPLIFIER
— PRINTED SIDE VIEW —



BH1217 (SONY)
VIDEO AMPLIFIER
— PRINTED SIDE VIEW —

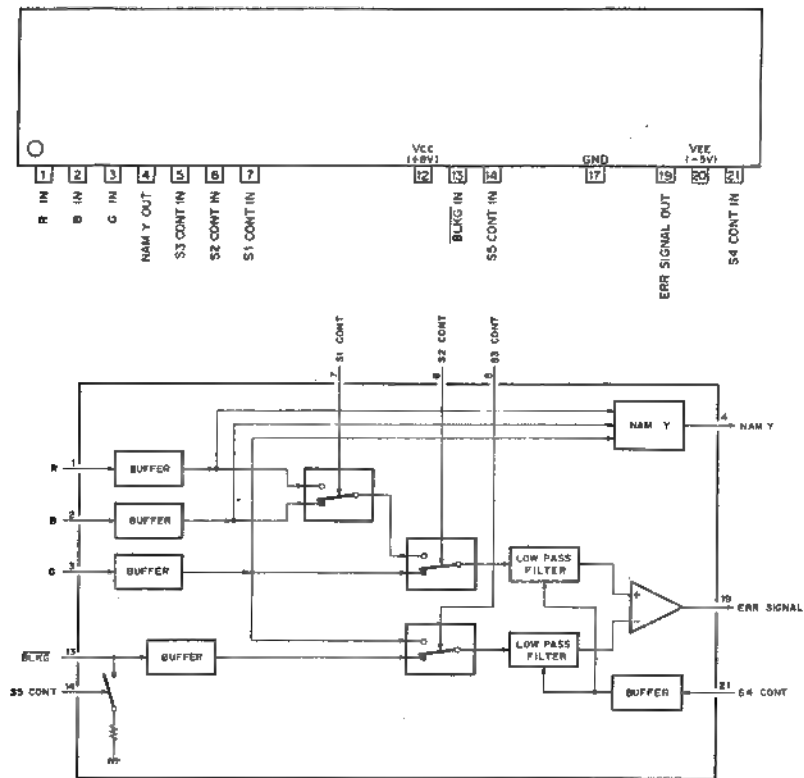


BH1219A (SONY)
VIDEO DC CONVERTER
— PRINTED SIDE VIEW —

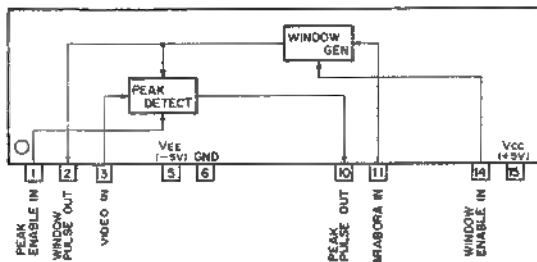


BVP-7 (J) 1-R6, BVP-7000HS (J) 1-R1
BVP-7 (UC) 1-R6, BVP-7000HS (UC) 1ST
BVP-7P (EK) 1-R5, BVP-7000HSP (EK) 1ST

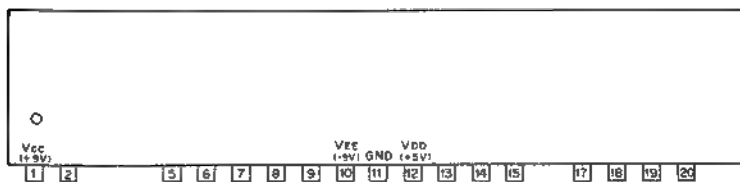
BH1220 (SONY)
VIDEO SWITCHER AND ERROR SIGNAL GENERATOR
— PRINTED SIDE VIEW —



BH1221 (SONY)
SAMPLE PULSE GENERATOR
— PRINTED SIDE VIEW —

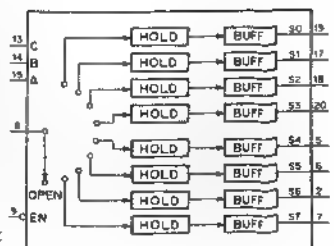


BX1179 (SONY)
8-CHANNEL SELECTABLE SAMPLING HOLDER
— PRINTED SIDE —

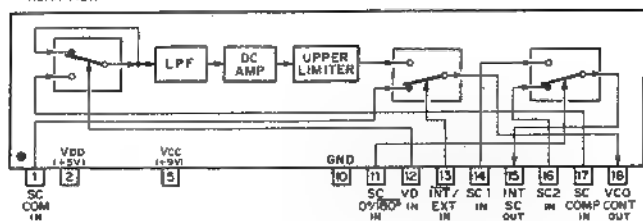


EN	C	B	A	ON CHANNEL
0	0	0	0	S0
0	0	0	1	S1
0	0	1	0	S2
0	0	1	1	S3
0	1	0	0	S4
0	1	0	1	S5
0	1	1	0	S6
0	1	1	1	S7
1	X	X	X	OPEN

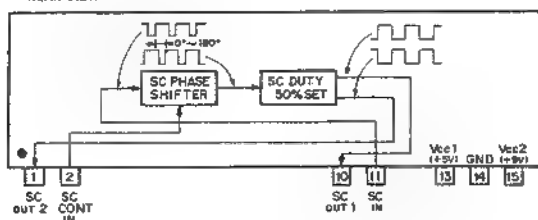
0: LOW LEVEL
1: HIGH LEVEL
X: DON'T CARE



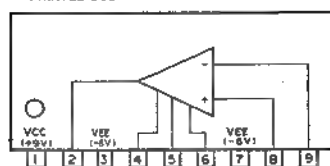
BX1338 (SONY)
APC AMPLIFIER AND SC 0/180° SELECTOR
— REAR VIEW —



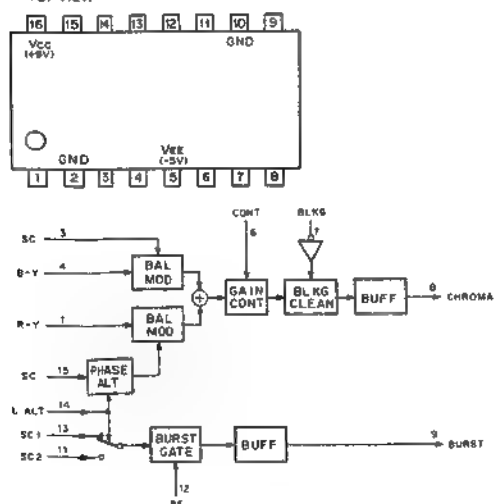
BX1339A (SONY)
SC PHASE SHIFTER
— REAR VIEW —



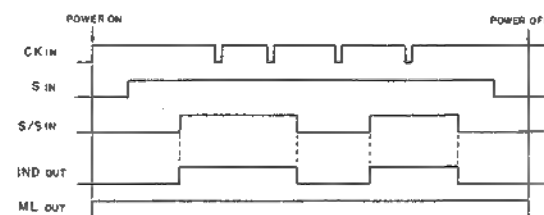
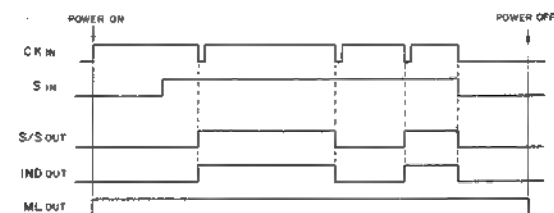
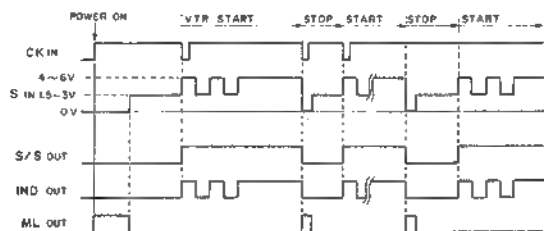
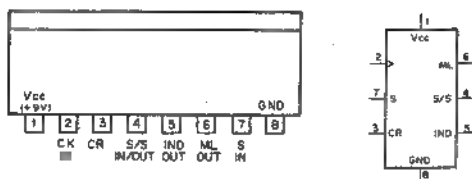
BX1356 (SONY)
VIDEO OUTPUT AMPLIFIER
— PRINTED SIDE —



CX22017 (SONY)
VIDEO SIGNAL PROCESSOR
— TOP VIEW —

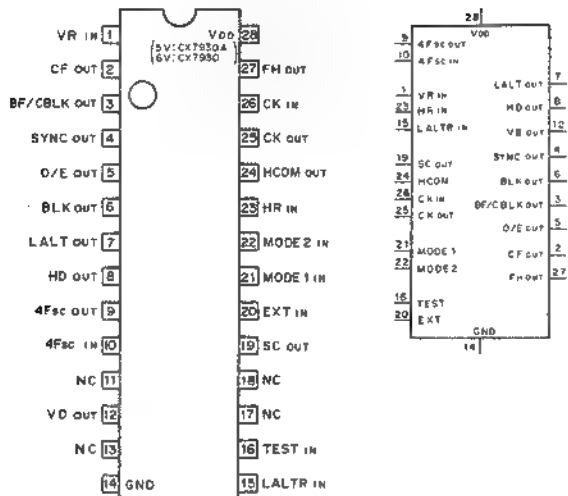


CX518 (SONY)
INTERFACE CIRCUIT BETWEEN VTR AND CAMERA
— SIDE VIEW —



BVP-7 (J) 1-R6, BVP-7000HS (J) 1-R1
BVP-7 (UC) 1-R6, BVP-7000HS (UC) 1ST
BVP-7P (EK) 1-R5, BVP-7000HSP (EK) 1ST

CX7930A (SONY) FLAT PACKAGE
C-MOS SYNC GENERATOR (NTSC, PAL-M, PAL SECAM)
— TOP VIEW —



O/E : ODD/EVEN FIELD
CF : COLOR FRAME PULSE
HCOM : H COMPARATOR

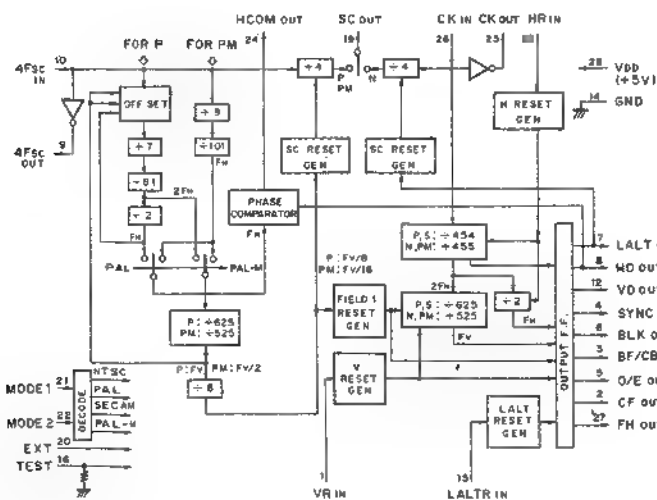
SYSTEM	4Fsc	CLOCK
NTSC	910 Fh	910 Fh
PAL	1135 Fh + 2 Fv	908 Fh
PALM	909 Fh	910 Fh
SECAM		908 Fh

INPUTS	MODE1	MODE2	SYSTEM
EXT TEST	0	0	NTSC
	0	1	SECAM
	1	0	PALM
	1	1	PAL

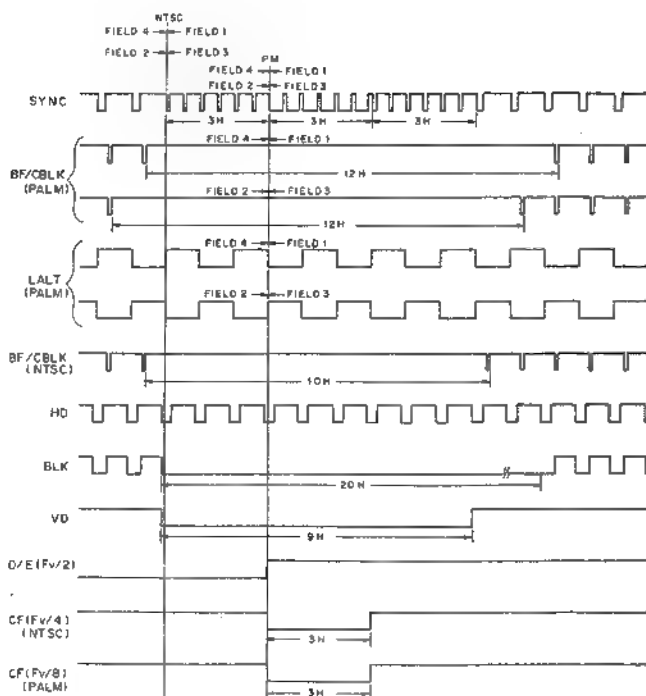
0 : LOW LEVEL (GND)
1 : HIGH LEVEL (VDD)

INPUTS	EXT TEST	FUNCTION
	0	INTERNAL
	0	INVALID
	1	EXT
	1	TEST

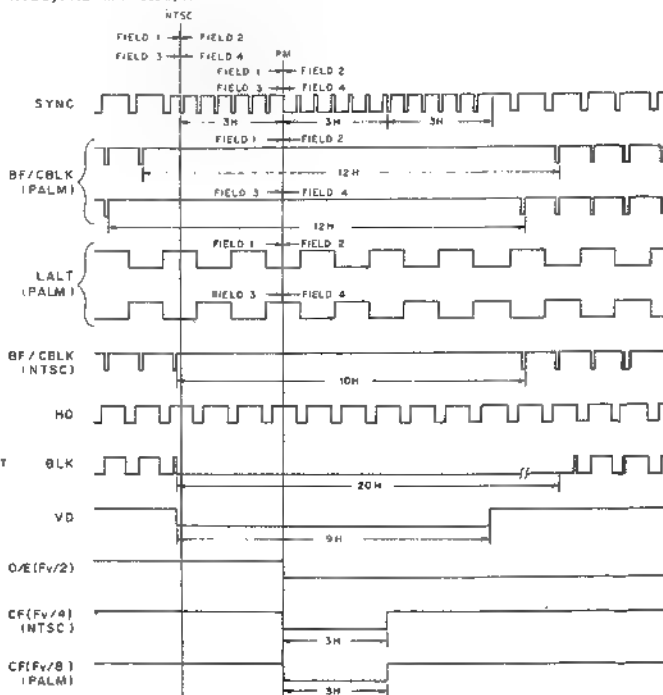
TEST '0' OPEN
(INTERNALLY PULLED DOWN)



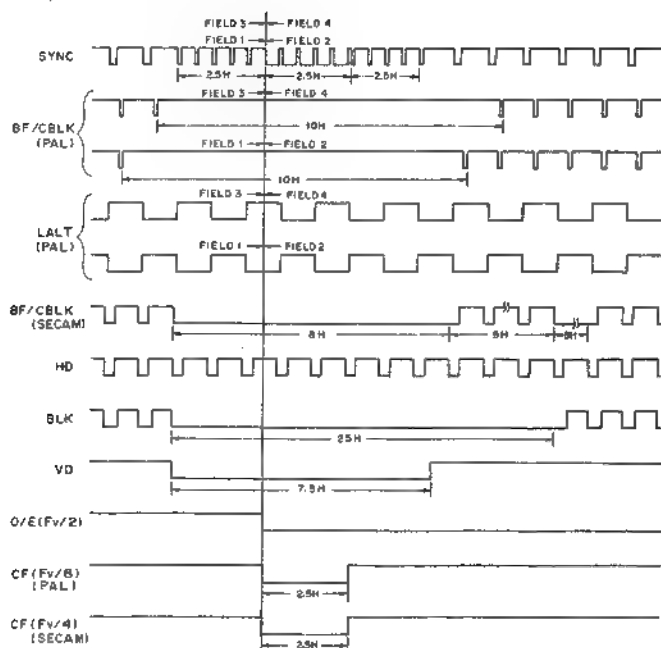
NTSC, PAL-M (FIELD 1, 3)



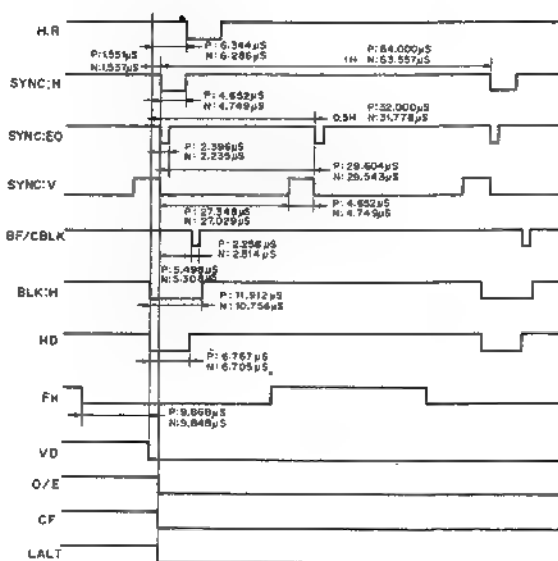
NTSC, PAL-M (FIELD 2, 4)



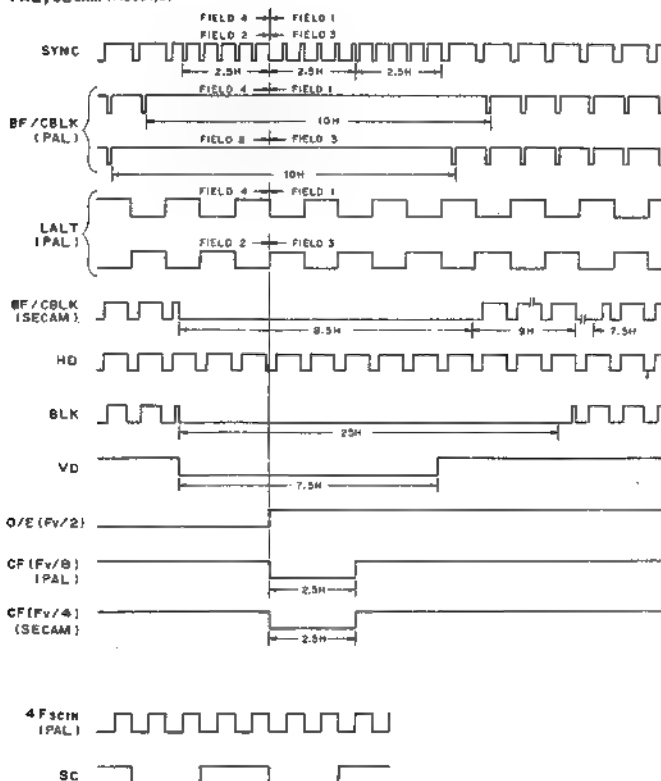
PAL, SECAM (FIELD 4,2)



P: PAL, SECAM
N: NTSC, PALM



PAL, SECAM (FIELD 1,3)



CX7988A (SONY)
C-MOS COLOR BAR GENERATOR
— TOP VIEW —

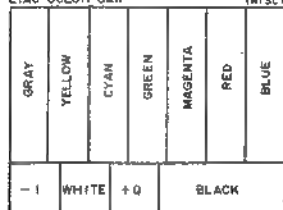
Pinout:

- Pin 1: BLUE OUT
- Pin 2: PAL/NTSC IN
- Pin 3: RED OUT
- Pin 4: MODE IN
- Pin 5: GREEN OUT
- Pin 6: GND
- Pin 7: Y OUT
- Pin 8: Y OUT
- Pin 9: I OUT
- Pin 10: I OUT
- Pin 11: Q OUT
- Pin 12: Q OUT
- Pin 13: NC
- Pin 14: NC
- Pin 15: NC
- Pin 16: NC
- Pin 17: NC
- Pin 18: NC
- Pin 19: VDD +5V
- Pin 20: NC
- Pin 21: NC
- Pin 22: NC
- Pin 23: NC
- Pin 24: NC
- Pin 25: NC
- Pin 26: NC
- Pin 27: NC
- Pin 28: NC
- Pin 29: NC
- Pin 30: CK OUT
- Pin 31: GND
- Pin 32: NC
- Pin 33: NC
- Pin 34: SETUP OUT
- Pin 35: SETUP OUT
- Pin 36: WHITE OUT
- Pin 37: CHROMA OFF OUT
- Pin 38: CB EN IN
- Pin 39: INV 2 OUT
- Pin 40: INV 2 IN
- Pin 41: REF IN
- Pin 42: INV 1 OUT
- Pin 43: VDD +5V
- Pin 44: INV 1 IN
- Pin 45: BAR CK IN
- Pin 46: EBU/95% IN
- Pin 47: BAR SP ON/OFF IN
- Pin 48: BLKG IN
- Pin 49: CHROMA OFF OUT

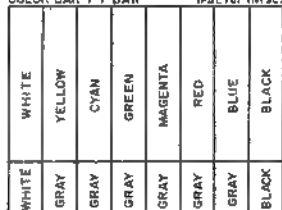
BVP-7(J) 1-R6, BVP-7000HS(J) 1-R1
BVP-7(UC) 1-R6, BVP-7000HS(UC) 1ST
BVP-7P(EK) 1-R5, BVP-7000HSP(EK) 1ST

○ COLOR BAR PATTERN

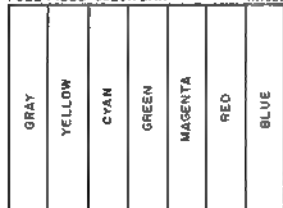
EIAJ COLOR BAR (NTSC)



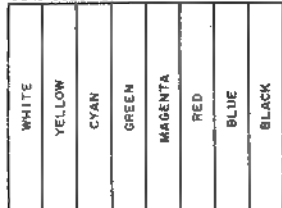
COLOR BAR + Y BAR (PAL/NTSC)



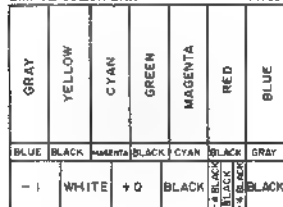
FULL FIELD COLOR BAR (NTSC)



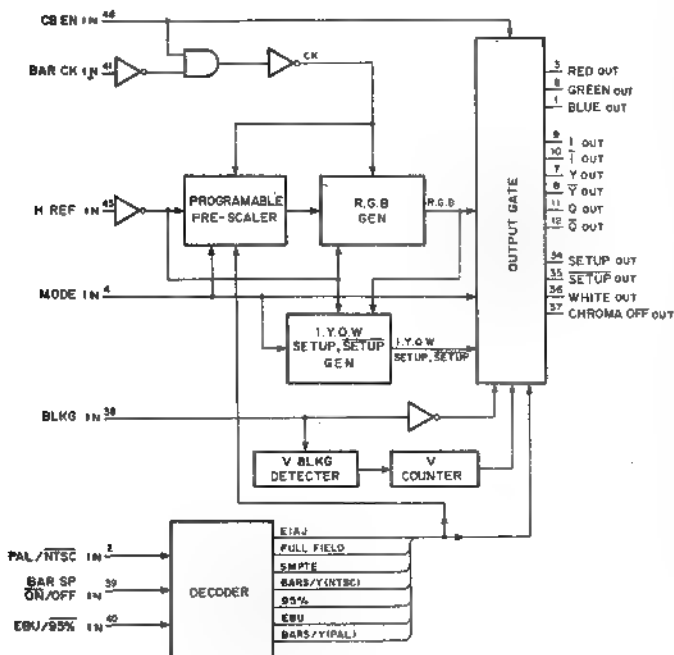
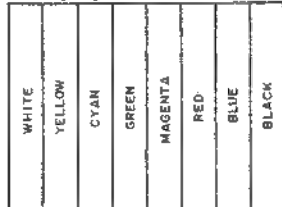
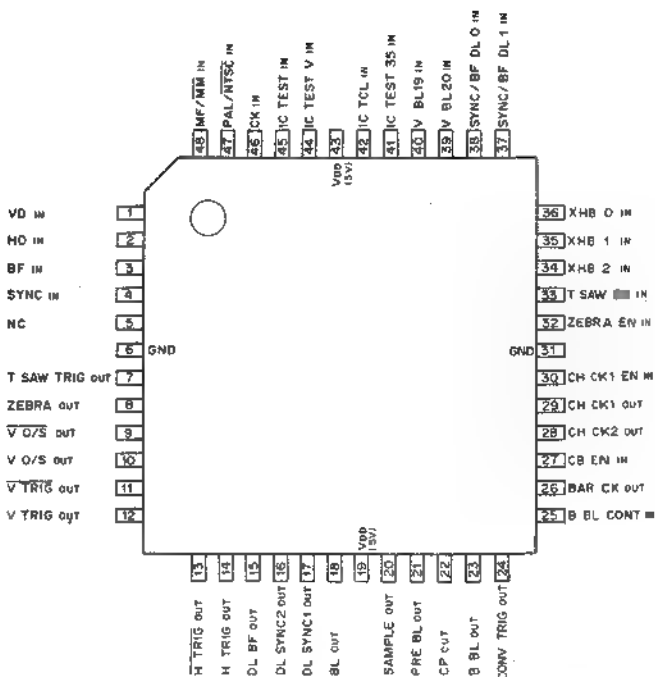
95% COLOR BAR (PAL)



SMPT COLOR BAR (NTSC)



EBU COLOR BAR (PAL)

CX7969 (SONY)
C-MOS PULSE GENERATOR
— TOP VIEW —

1. SYSTEM DESIGNATION

INPUT	SYSTEM
PAL/NTSC IN	
1	PAL, SECAM
0	NTSC, PALM

2. TYPE OF TUBE

INPUT	FUNCTION
MF/MM IN	
1	MAG-STA TUBE
0	MAG-MAG TUBE

3. V BLKG WIDTH (NTSC ONLY)

INPUT	V BL 19	V BL 20	V BLKG WIDTH
1	X		19H
0	1		20H
0	0		21H

4. H BLKG WIDTH

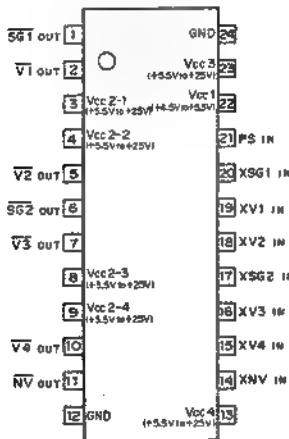
INPUT	XHB2	XHB1	XHB0	NTSC	PAL
1	1	1	1	10.27	11.49
1	1	1	0	10.34	11.56
1	0	1	1	10.41	11.63
1	0	0	1	10.48	11.70
0	1	1	1	10.55	11.77
0	1	0	1	10.62	11.84
0	0	1	1	10.69	11.91
0	0	0	1	10.76	11.98

5. DELAY TIME

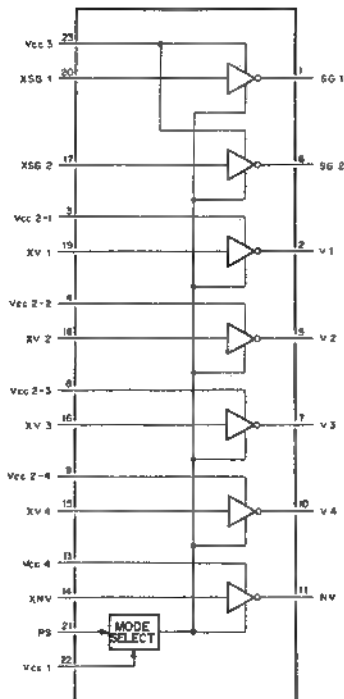
INPUT	SYNC/BF DL	DL SYNC 1	DL SYNC 2	DL BF
1	1	140	210	140
1	0	210	280	210
1	1	630	700	630
0	0	700	770	700

1; HIGH LEVEL
0; LOW LEVEL
X; DON'T CARE

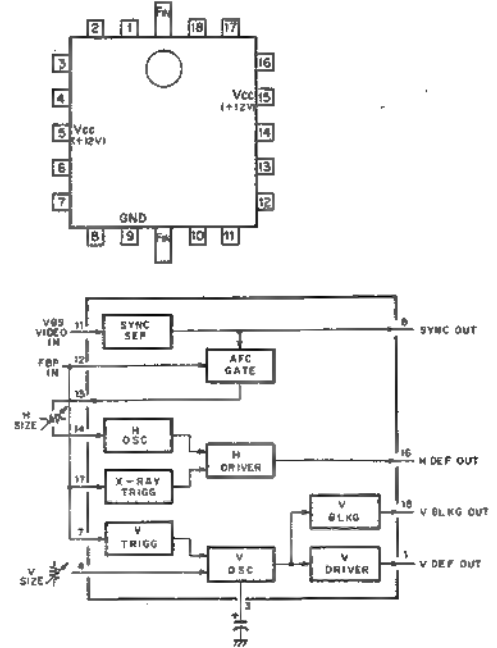
CXA1085M (SONY) FLAT PACKAGE
INVERTING DRIVER FOR CCD CLOCK WITH POWER SAVE
— TOP VIEW —



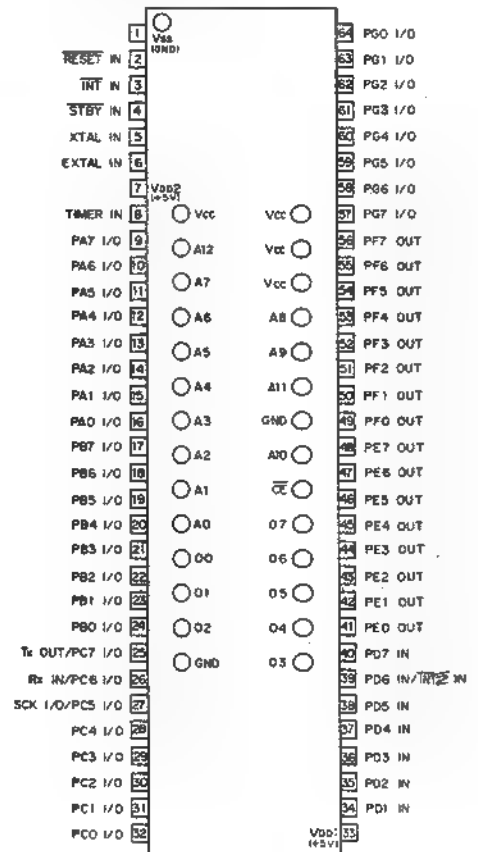
XV1-XV4: VERTICAL REGISTER TRANSMISSION CLOCK INPUT
V1-V4: VERTICAL REGISTER TRANSMISSION CLOCK OUTPUT
XSG1, XSG2: SENSER GATE PULSE INPUT
SGT, SGT2: SENSER GATE PULSE OUTPUT
XNV: DRIVER INPUT
NV: DRIVER OUTPUT
PS: POWER SAVE INPUT
Vcc1: BIAS VOLTAGE
Vcc 2-1: V1 OUTPUT PULSE VOLTAGE
Vcc 2-2: V2 OUTPUT PULSE VOLTAGE
Vcc 2-3: V3 OUTPUT PULSE VOLTAGE
Vcc 2-4: V4 OUTPUT PULSE VOLTAGE
Vcc 3: SGT, SGT2 OUTPUT PULSE VOLTAGE
Vcc 4: NV OUTPUT PULSE VOLTAGE



HA11423MP (HITACHI) FLAT PACKAGE
TV H/V SYNC SIGNAL PROCESSOR
— TOP VIEW —

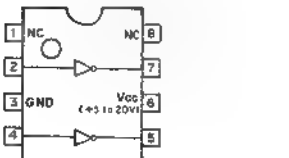


HD63P05Y0 (HITACHI) (INSTRUCTION CYCLE = 1μs; fck = 4MHz)
HD63P805Y0 (HITACHI) (INSTRUCTION CYCLE = 0.5μs; fck = 8MHz)
C-MOS 8-BIT MICROCOMPUTER UNIT
— TOP VIEW —

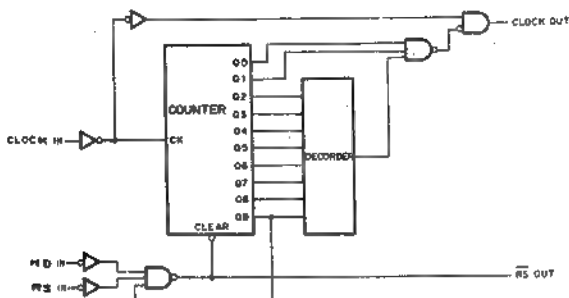
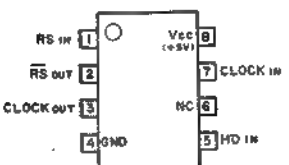


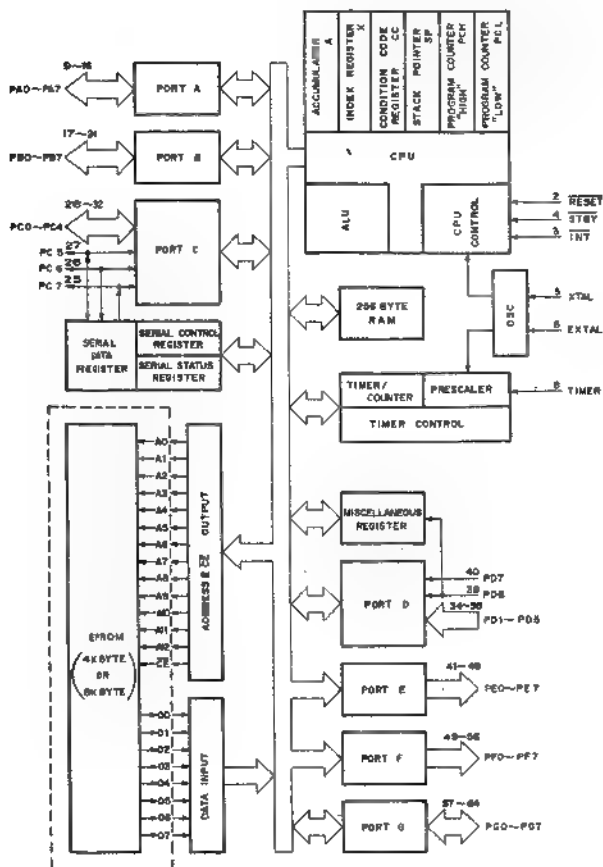
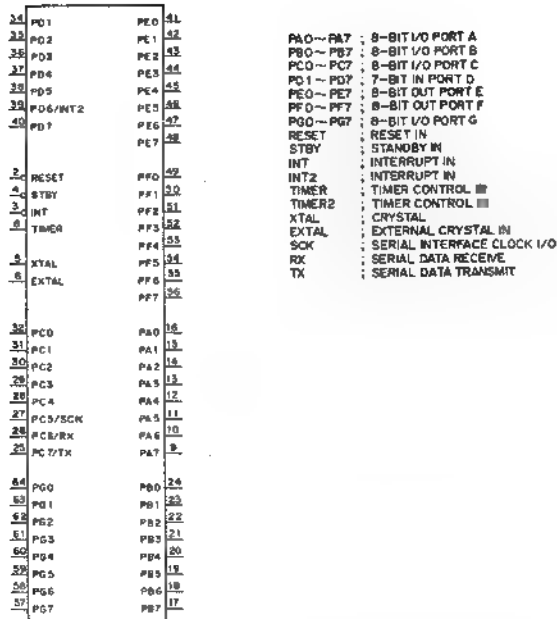
BVP-7 (J) 1-R6, BVP-7000HS (J) 1-R1
BVP-7 (UC) 1-R6, BVP-7000HS (UC) 1-ST
BVP-7P (EK) 1-R5, BVP-7000HSP (EK) 1-ST

CXB0028AM (SONY) FLAT PACKAGE
BIPOLAR MOS CLOCK DRIVER
— TOP VIEW —



CXD1361M (TI) FLAT PACKAGE
CLOCK CONTROLLER
— TOP VIEW —

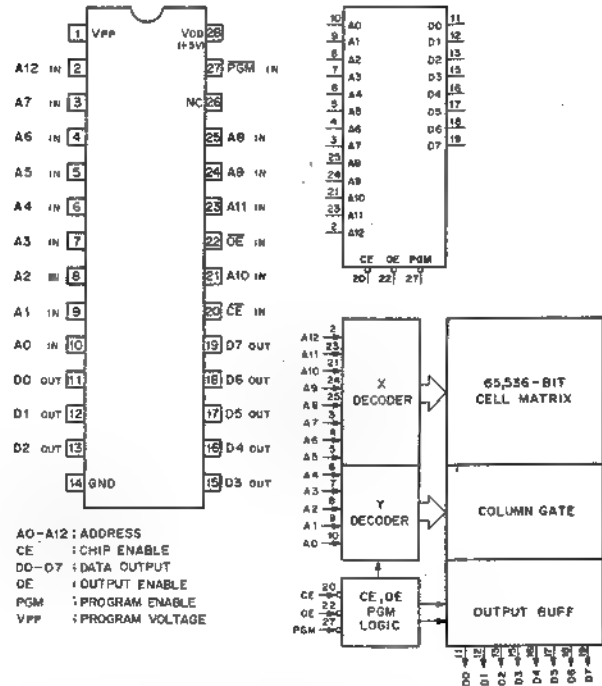




BVP-7 (J) 1-R6, BVP-7000HS (J) 1-R1
BVP-7 (UC) 1-R6, BVP-7000HS (UC) 1ST
BVP-7P (EK) 1-R5, BVP-7000HSP (EK) 1ST

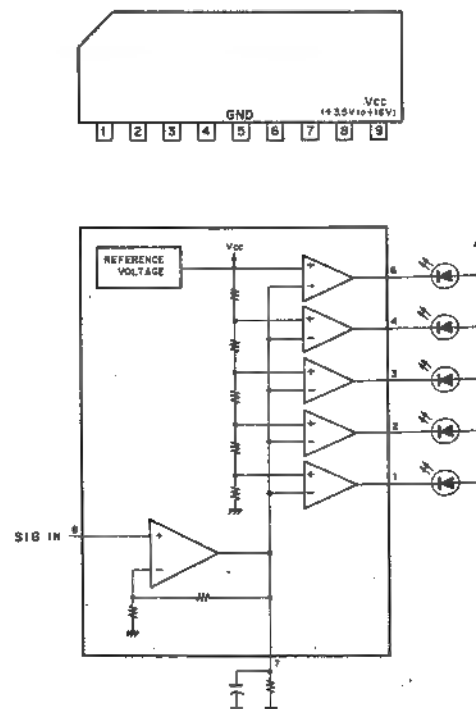
HN27C64G

HN27C64G-20 (HITACHI) (ACCESS TIME = 200 nS)
C-MOS 64K (8K-8) ERASABLE PROM WITH 3-STATE OUTPUTS
— TOP VIEW —

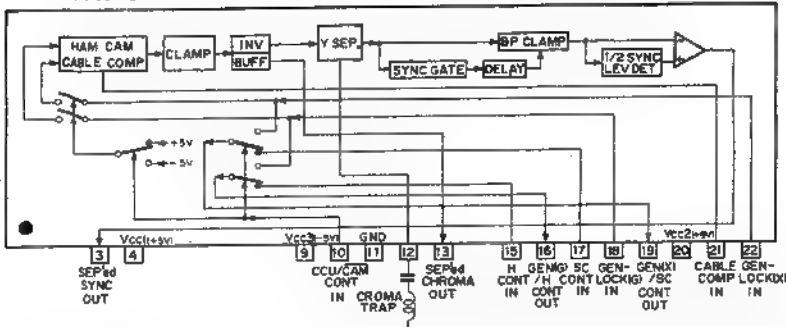


Address	CE	OE	PGM	VPP	Dn	FUNCTION
A0	0	0	1	+5V	D OUT	READ
A0	0	1	1	+5V	HI-Z	OUTPUT DISABLE
A0	0	0	0	+5V	HI-Z	OUTPUT DISABLE
X	1	X	X	+5V	HI-Z	STANDBY
A0	0	X	1	+2V	D IN	PGM
A0	0	0	1	+2V	D OUT	PGM VERIFY
X	1	X	X	+21V	HI-Z	PGM INH

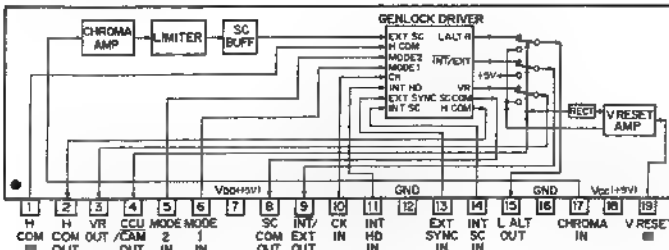
0: LOW LEVEL
1: HIGH LEVEL
X: DON'T CARE
HI-Z: HIGH IMPEDANCE

LB1423N (SANYO)
LED DRIVER FOR AC/DC LEVEL METER
— SIDE VIEW —

SBX1516 (SONY)
SYNC SEPARATOR
— PRINTED SIDE VIEW —



SBX1525 (SONY)
SC LIMITER AND GENLOCK DRIVER
— PRINTED SIDE VIEW —

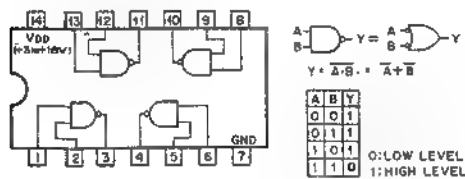


MODE SELECTION

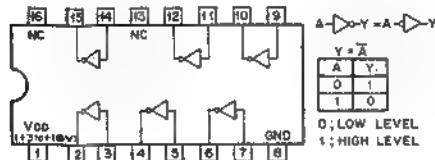
MODE1	MODE2	MODE
1	1	NTSC
0	0	PAL

0: LOW LEVEL
1: HIGH LEVEL

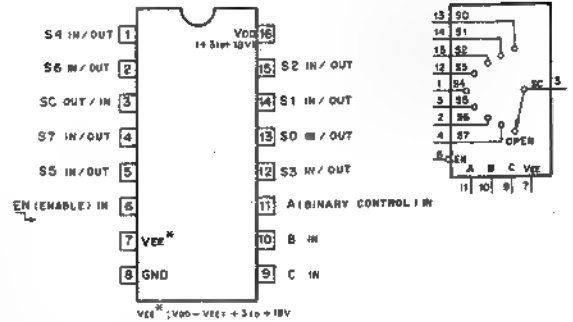
TC4011 (TOSHIBA) FLAT PACKAGE
C-MOS 2-INPUT NAND GATE
— TOP VIEW —



TC4049BF (TOSHIBA) FLAT PACKAGE
C-MOS INVERTING TYPE BUFFER/CONVERTER
— TOP VIEW —



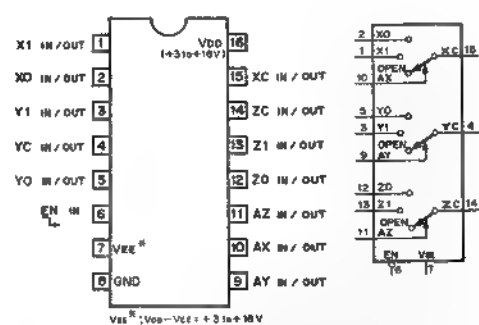
TC4051BF (TOSHIBA) FLAT PACKAGE
C-MOS 8-CHANNEL MULTIPLEXER/DEMULTIPLEXER
— TOP VIEW —



EN	C	B	A	'ON' CHANNEL
0	0	0	0	0
0	0	0	1	1
0	0	1	0	2
0	0	1	1	3
0	1	0	0	4
0	1	0	1	5
0	1	1	0	6
0	1	1	1	7
1	X	X	X	OPEN

0: LOW LEVEL
1: HIGH LEVEL
X: DON'T CARE

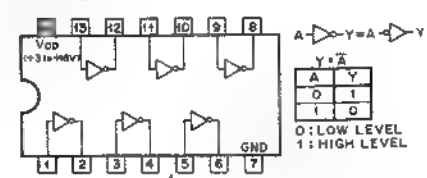
TC4053BF (TOSHIBA) FLAT PACKAGE
C-MOS 2-CHANNEL MULTIPLEXER/DEMULTIPLEXER
— TOP VIEW —



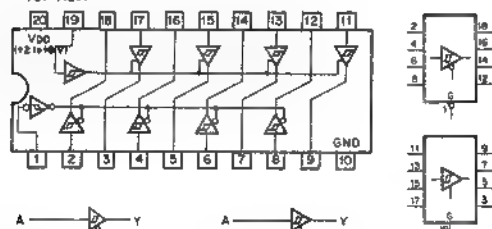
CONT. INPUTS	EN	A (X,Y,Z)	ON CHANNEL
0	0	0	0
0	1	1	1
1	X	X	OPEN

0: LOW LEVEL
1: HIGH LEVEL
X: DON'T CARE.

TC4069UBF (TOSHIBA) FLAT PACKAGE
C-MOS INVERTER
— TOP VIEW —



TC40H241F (TOSHIBA) FLAT PACKAGE
C-MOS 3-STATE SCHMITT TRIGGER BUFFER/LINE DRIVER
— TOP VIEW —



G	A	Y
0	0	0
0	1	1
1	0	HI-Z
1	1	HI-Z

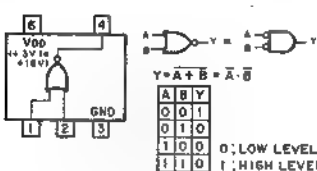
HI-Z ;
HIGH IMPEDANCE



G	A	Y
0	0	HI-Z
0	1	HI-Z
1	0	0
1	1	1

HI-Z ;
HIGH IMPEDANCE

TC4501F (TOSHIBA) FLAT PACKAGE
C-MOS 2-INPUT NOR GATE
— TOP VIEW —

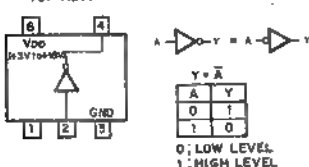


$$Y = A + B = \overline{A \cdot B}$$

A	B	Y
0	0	1
0	1	0
1	0	0
1	1	0

0; LOW LEVEL
1; HIGH LEVEL

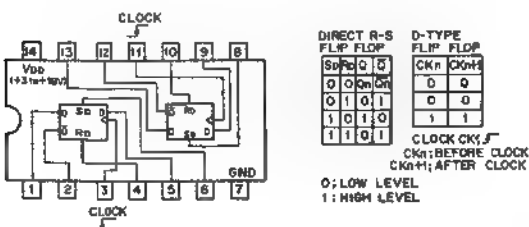
TC4S89F (TOSHIBA) FLAT PACKAGE
C-MOS INVERTER
— TOP VIEW —



A	Y
0	1
1	0

0; LOW LEVEL
1; HIGH LEVEL

TC5D4013BF (TOSHIBA) FLAT PACKAGE
C-MOS D-TYPE FLIP FLOP WITH DIRECT SET/RESET
— TOP VIEW —

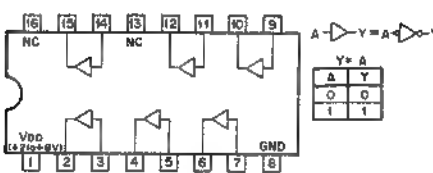


DIRECT R-S FLIP FLOP				D-TYPE FLIP FLOP	
S	R	Q	Q'	CKn	CKn'
0	0	Qn	Qn'	0	0
0	1	0	1	0	0
1	0	1	0	1	1
1	1	Q	Q'		

CLOCK CKn

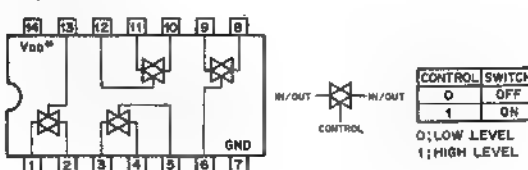
CLOCK CKY; \overline{CK}
CKn: BEFORE CLOCK
CKn+1: AFTER CLOCK
0; LOW LEVEL
1; HIGH LEVEL

TC50H001F (TOSHIBA) FLAT PACKAGE
C-MOS NON-INVERTING TYPE BUFFER/CONVERTER
— TOP VIEW —



A	Y
0	0
1	1

TC74HC4066F (TOSHIBA) FLAT PACKAGE
C-MOS BILATERAL ANALOG SWITCH
— TOP VIEW —

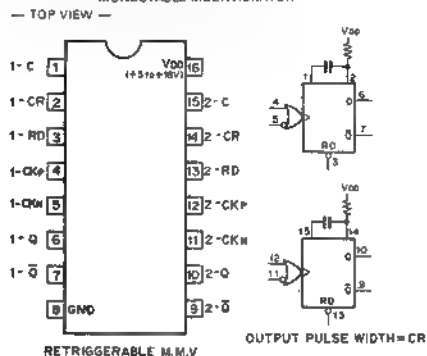


CONTROL	SWITCH
0	OFF
1	ON

0; LOW LEVEL
1; HIGH LEVEL

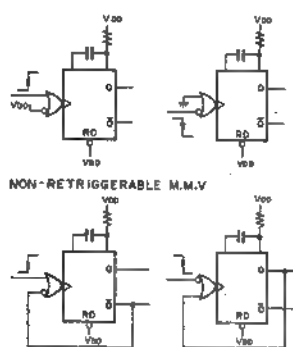
* MC: $V_{DD} - GND = +3.0 \pm 12V$
TC: $V_{DD} = +2.0 \pm 6V$

SN74HC4538NS (TI) FLAT PACKAGE
SN74HS4066NS (TI) FLAT PACKAGE
TC74HC4538F (TOSHIBA) FLAT PACKAGE
C-MOS DUAL RETRIGGERABLE/NON-RETRIGGERABLE
MONOSTABLE MULTIVIBRATOR
— TOP VIEW —



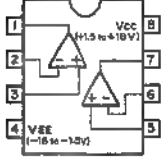
RETRIGGERABLE M.M.V

OUTPUT PULSE WIDTH = CR

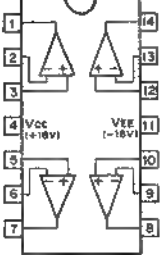


NON-RETRIGGERABLE M.M.V

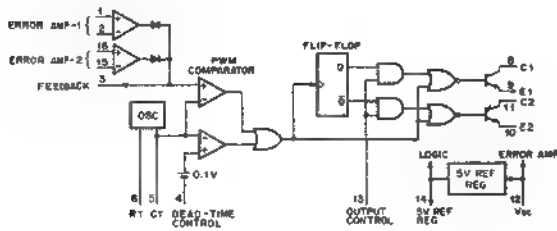
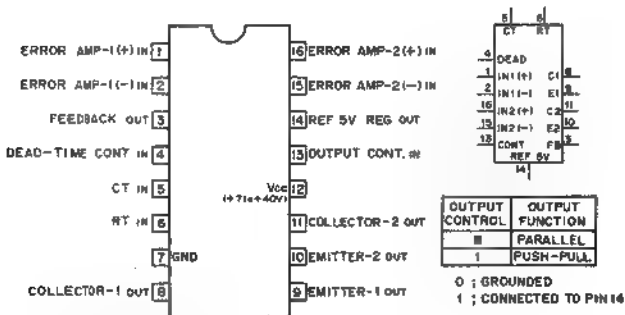
TL062ACPS (TI) FLAT PACKAGE
OPERATIONAL AMPLIFIER
(JFET INPUT)
— TOP VIEW —



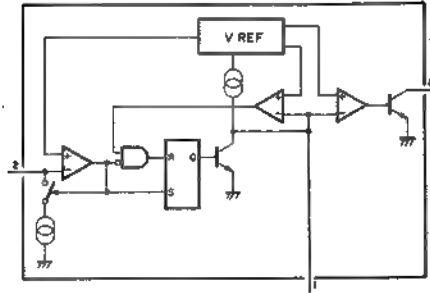
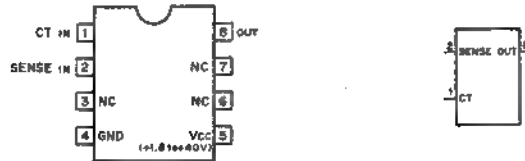
TL064CNS (TI) FLAT PACKAGE
OPERATIONAL AMPLIFIER
(J FET-INPUT)
— TOP VIEW —



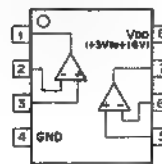
TL494CNS (TI) FLAT PACKAGE
PWM POWER CONTROL
— TOP VIEW —



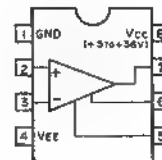
TL7700CPS (TI) FLAT PACKAGE
VARIABLE SUPPLY VOLTAGE SUPERVISOR
— TOP VIEW —



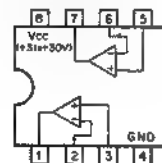
TLC27L2CPS (TI) FLAT PACKAGE
OPERATIONAL AMPLIFIER
— TOP VIEW —



uPC311G2 (NEC) FLAT PACKAGE
VOLTAGE COMPARATOR
— TOP VIEW —



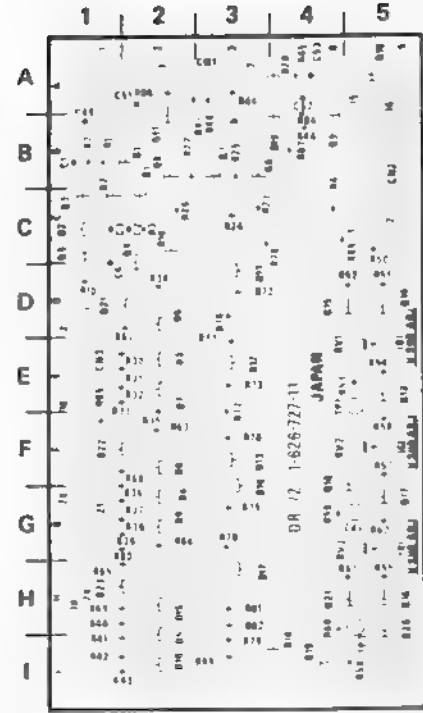
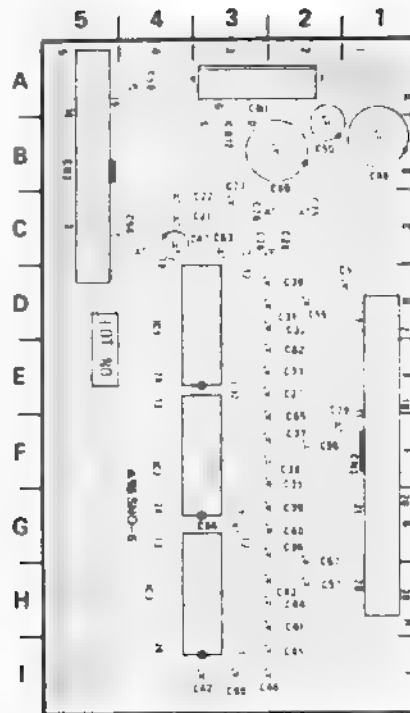
uPC35BG2 (NEC) FLAT PACKAGE
DUAL OPERATIONAL AMPLIFIERS
— TOP VIEW —



BVP-7 (J) 1-R6, BVP-7000HS (J) 1-R1
BVP-7 (UC) 1-R6, BVP-7000HS (UC) 1ST
BVP-7P (EK) 1-R5, BVP-7000HSP (EK) 1ST

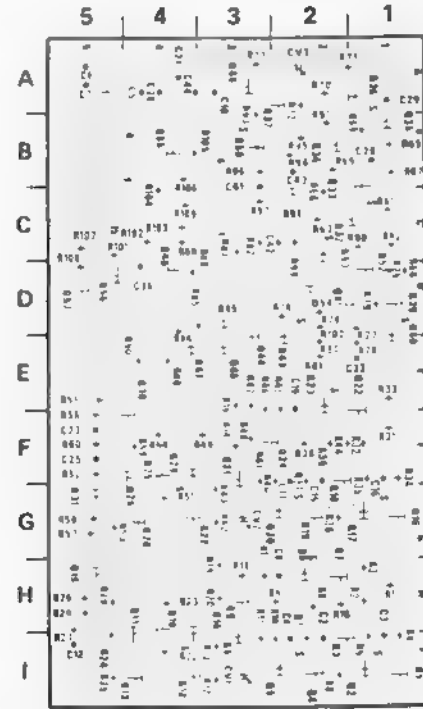
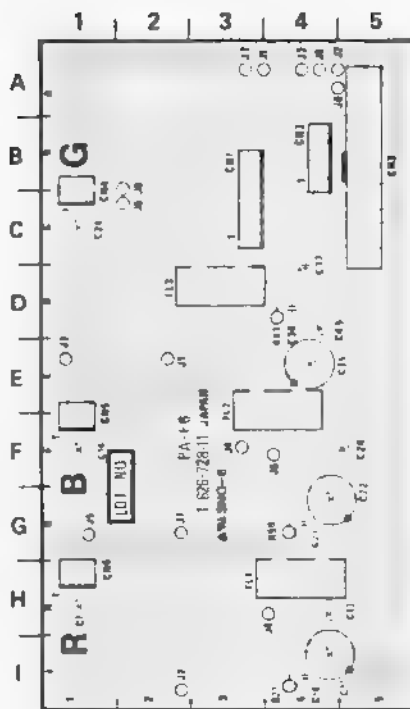
SECTION C
SCHEMATIC DIAGRAMS AND BOARD ILLUSTRATIONS

Ser.No. 10001-10060 (UC)
30001-30040 (J)

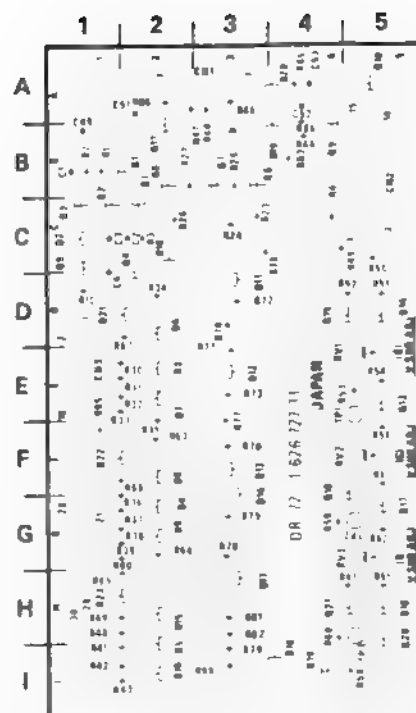
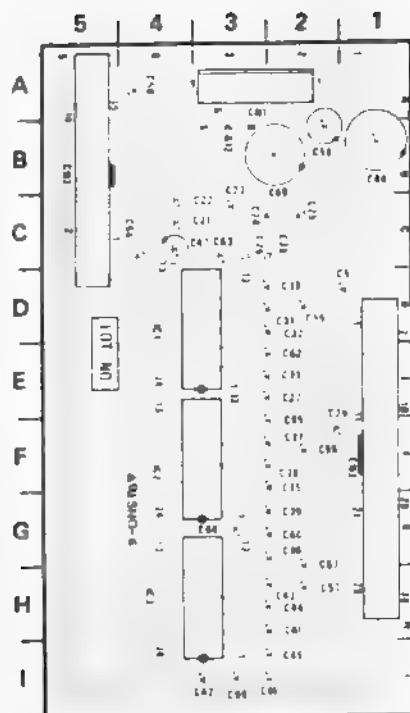


PA-86 1-626-728-11

CN1	B-3	Q21	F-3
CN2	B-4	Q22	E-1
CN3	B-5	Q23	E-2
CN4	B-1	Q24	F-2
CN5	F-1	Q25	F-4
CN6	H-1	Q26	G-4
		Q27	G-3
CV1	I-3	Q28	G-4
CV2	G-3	Q29	F-4
CV3	A-2	Q30	E-4
		Q31	G-5
FL1	H-3	Q32	C-2
FL2	F-3	Q33	C-2
FL3	D-2	Q34	B-2
		Q35	B-1
Q1	I-1	Q36	A-1
Q2	I-2	Q37	B-3
Q3	I-2	Q39	D-1
Q4	I-2	Q40	E-1
Q5	I-3	Q41	D-2
Q6	I-3	Q43	E-2
Q7	G-2	Q44	E-3
Q8	G-2	Q45	D-3
Q9	H-3	Q46	E-3
Q10	H-4	Q47	E-4
Q11	H-4	Q48	C-4
Q12	I-4	Q49	A-3
Q13	I-4	Q50	B-3
Q14	H-3	Q51	C-2
Q15	H-5	Q52	D-1
Q16	G-1	Q53	C-2
Q17	G-1	Q54	D-2
Q18	G-2	Q55	B-3
Q19	G-2	Q56	D-5
Q20	G-3	Q57	D-5

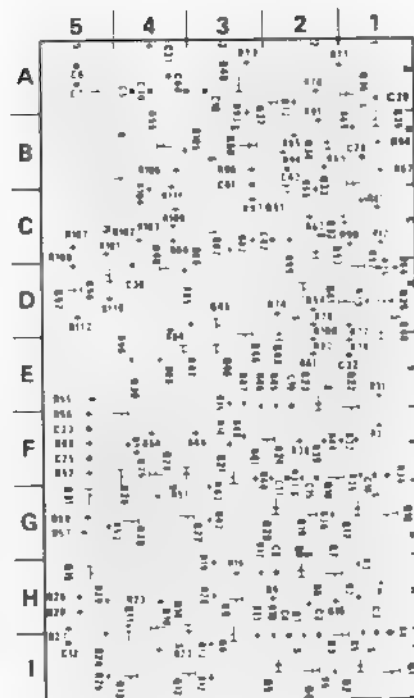
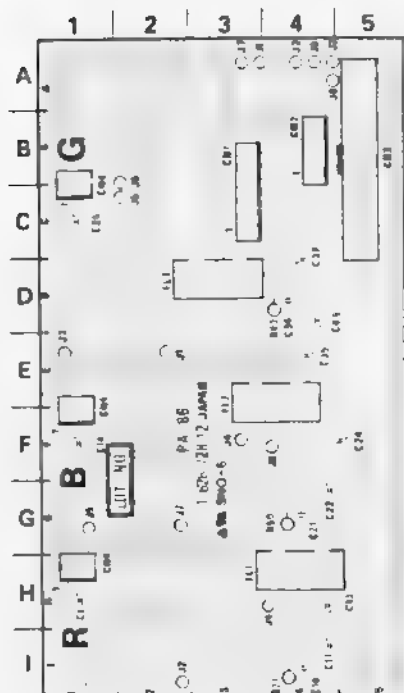


Ser. No. 10061-10210 (UC)
30041-30130 (J)
40001-40130 (EK)

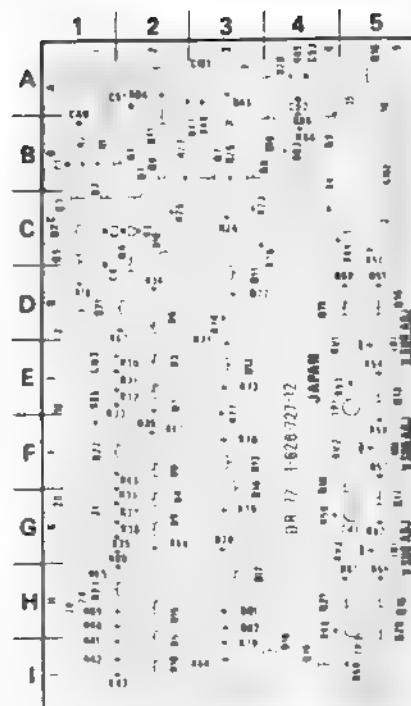
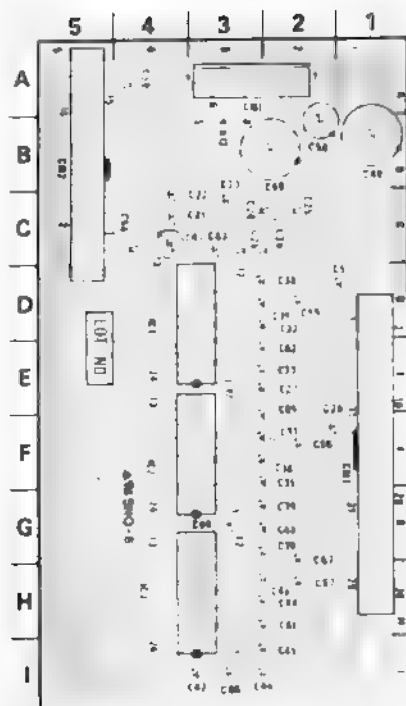


PA-86 1-626-728-12

CN1	B-3	Q21	F-3
CN2	B-4	Q22	E-1
CN3	B-5	Q23	E-2
CN4	B-1	Q24	F-2
CN5	F-1	Q25	F-4
CN6	H-1	Q26	G-4
		Q27	G-3
FL1	H-3	Q28	G-4
FL2	F-3	Q29	F-4
FL3	D-2	Q30	E-4
		Q31	G-5
Q1	I-1	Q32	E-2
Q2	I-2	Q33	C-2
Q3	I-2	Q34	B-2
Q4	I-2	Q35	B-1
Q5	I-3	Q36	A-1
Q6	I-3	Q37	B-3
Q7	G-2	Q39	D-1
Q8	G-2	Q40	E-1
Q9	H-3	Q41	D-2
Q10	H-4	Q43	E-2
Q11	H-4	Q44	E-3
Q12	I-4	Q45	D-3
Q13	I-4	Q46	E-3
Q14	H-3	Q47	E-4
Q15	H-5	Q48	C-4
Q16	G-1	Q49	A-3
Q17	G-1	Q50	B-3
Q18	G-2	Q51	C-2
Q19	G-2	Q52	D-1
Q20	G-3	Q53	C-2
		Q54	D-2
		Q55	B-3
		Q56	D-5
		Q57	D-5



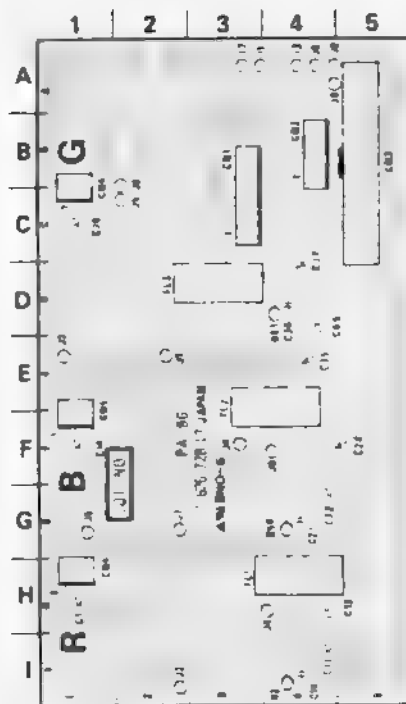
Ser. No. 10211-10430 (UC)
30131-30250 (J)
40131-40380 (EK)



Ser. No. 10211-10360 (UC)
30131-30190 (J)
40131-40250 (EK)

PA-86 1-626-728-13

CN1	B-3	Q21	F-3
CN2	B-4	Q22	E-1
CN3	B-5	Q23	E-2
CN4	B-1	Q24	F-2
CN5	F-1	Q25	F-4
CN6	H-1	Q26	G-4
		Q27	G-3
FL1	H-3	Q28	G-4
FL2	F-3	Q29	F-4
FL3	D-3	Q30	E-4
		Q31	G-5
Q1	I-1	Q32	C-2
Q2	I-2	Q33	C-2
Q3	I-2	Q34	B-2
Q4	I-2	Q35	B-1
Q5	I-3	Q36	A-1
Q6	I-3	Q37	B-3
Q7	G-2	Q39	D-1
Q8	G-2	Q40	E-1
Q9	H-3	Q41	D-2
Q10	H-4	Q43	E-2
Q11	H-4	Q44	E-3
Q12	I-4	Q45	D-3
Q13	I-4	Q46	E-3
Q14	H-3	Q47	E-4
Q15	H-5	Q48	C-4
Q16	G-1	Q49	A-3
Q17	G-1	Q50	B-3
Q18	G-2	Q51	C-2
Q19	G-2	Q52	D-1
Q20	G-3	Q53	C-2
		Q54	D-2
		Q55	B-3
		Q56	D-5
		Q57	D-5

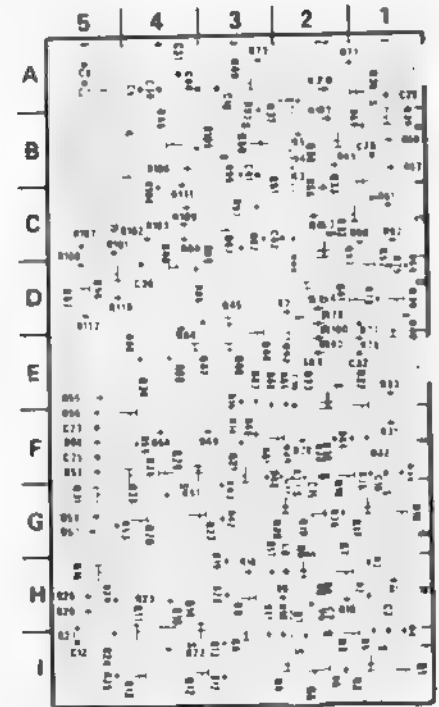
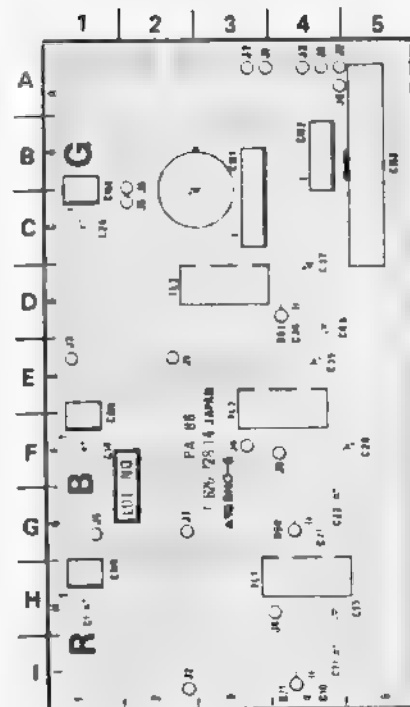
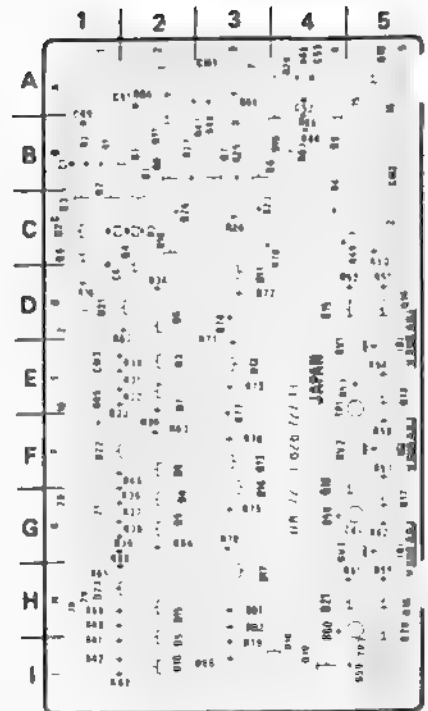
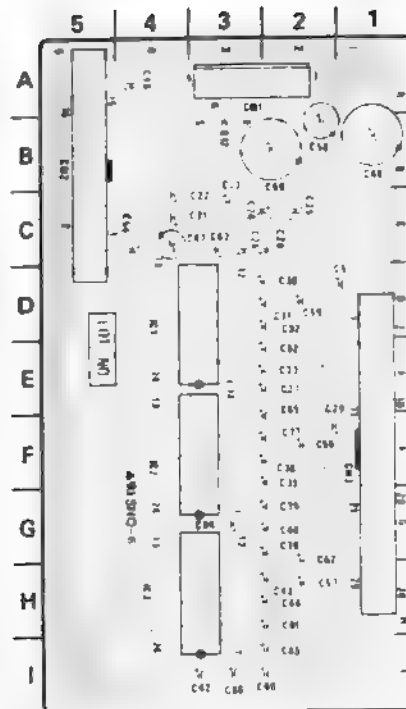


Ser. No. 10431- (UC)
30251- (J)
40381- (EK)

Ser. No. 10361-11220 (UC)
30191-30650 (J)
40251-42025 (EK)

PA-85 1-626-728-14

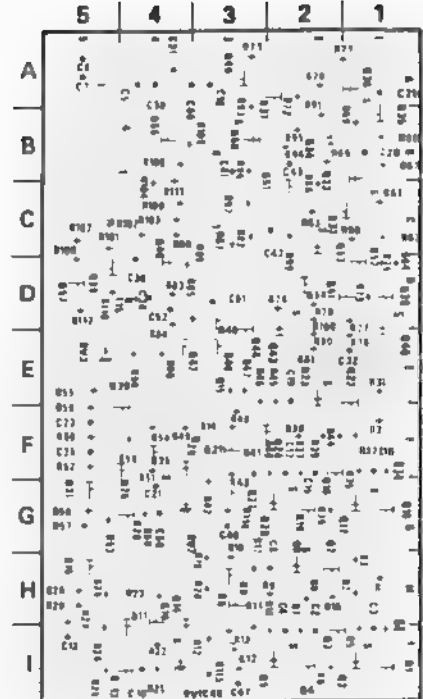
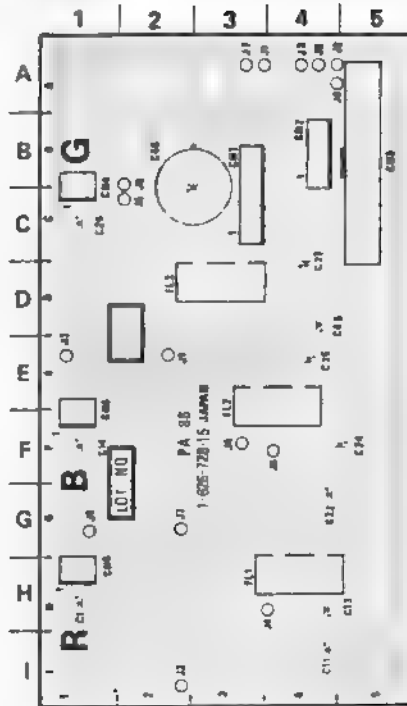
CN1	B-3	Q21	F-3
CN2	B-4	Q22	E-1
CN3	B-5	Q23	E-2
CN4	B-1	Q24	F-2
CN5	F-1	Q25	F-4
CN6	H-1	Q26	G-4
		Q27	G-3
FL1	H-3	Q28	G-4
FL2	F-3	Q29	F-4
FL3	D-2	Q30	E-4
		Q31	G-5
Q1	I-1	Q32	C-2
Q2	I-2	Q33	C-2
Q3	I-2	Q34	B-2
Q4	I-2	Q35	B-1
Q5	I-3	Q36	A-1
Q6	I-3	Q37	B-3
Q7	G-2	Q39	D-1
Q8	G-2	Q40	E-1
Q9	H-3	Q41	D-2
Q10	H-4	Q43	E-2
Q11	H-4	Q44	E-3
Q12	I-4	Q45	D-3
Q13	I-4	Q46	E-3
Q14	H-3	Q47	E-4
Q15	H-5	Q48	C-4
Q16	G-1	Q49	A-3
Q17	G-1	Q50	B-3
Q18	G-2	Q51	C-2
Q19	G-2	Q52	D-1
Q20	G-3	Q53	C-2
		Q54	D-2
		Q55	B-3
		Q56	D-5
		Q57	D-5

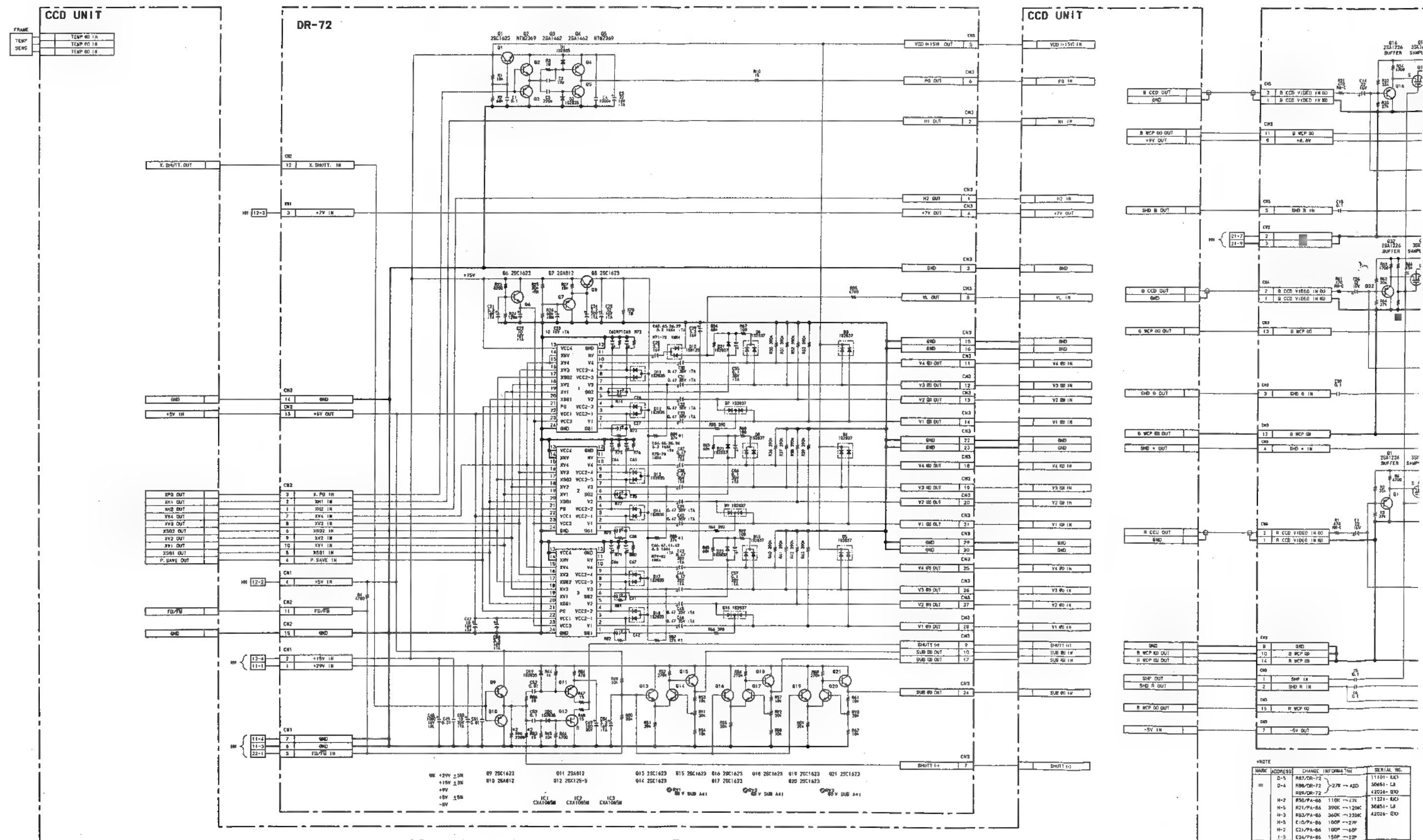


Ser. No. 11221- (UC)
30651- (J)
42026- (EK)

PA-86 1-626-728-15

CN1	B-3	Q21	F-3
CN2	B-4	Q22	E-1
CN3	B-5	Q23	E-2
CN4	B-1	Q24	F-2
CN5	F-1	Q25	F-4
CN6	H-1	Q26	G-4
		Q27	G-3
FL1	H-3	Q28	G-4
FL2	F-3	Q29	F-4
FL3	D-2	Q30	E-4
		Q31	G-5
Q1	I-1	Q32	C-2
Q2	I-2	Q33	C-2
Q3	I-2	Q34	B-2
Q4	I-2	Q35	B-1
Q5	I-3	Q36	A-1
Q6	I-3	Q37	B-3
Q7	G-2	Q39	D-1
Q8	G-2	Q40	E-1
Q9	H-3	Q41	D-2
Q10	H-4	Q43	E-2
Q11	H-4	Q44	E-3
Q12	I-4	Q45	D-3
Q13	I-4	Q46	E-3
Q14	H-3	Q47	E-4
Q15	H-5	Q48	C-4
Q16	G-1	Q49	A-3
Q17	G-1	Q50	B-3
Q18	G-2	Q51	C-2
Q19	G-2	Q52	D-1
Q20	G-3	Q53	C-2
		Q54	D-2
		Q55	B-3
		Q56	D-5
		Q57	D-5





BVP-7 (J) 1-R7
BVP-7 (UC) 1-R7
BVP-7P (EK) 1-R6

C-3

C-4

A

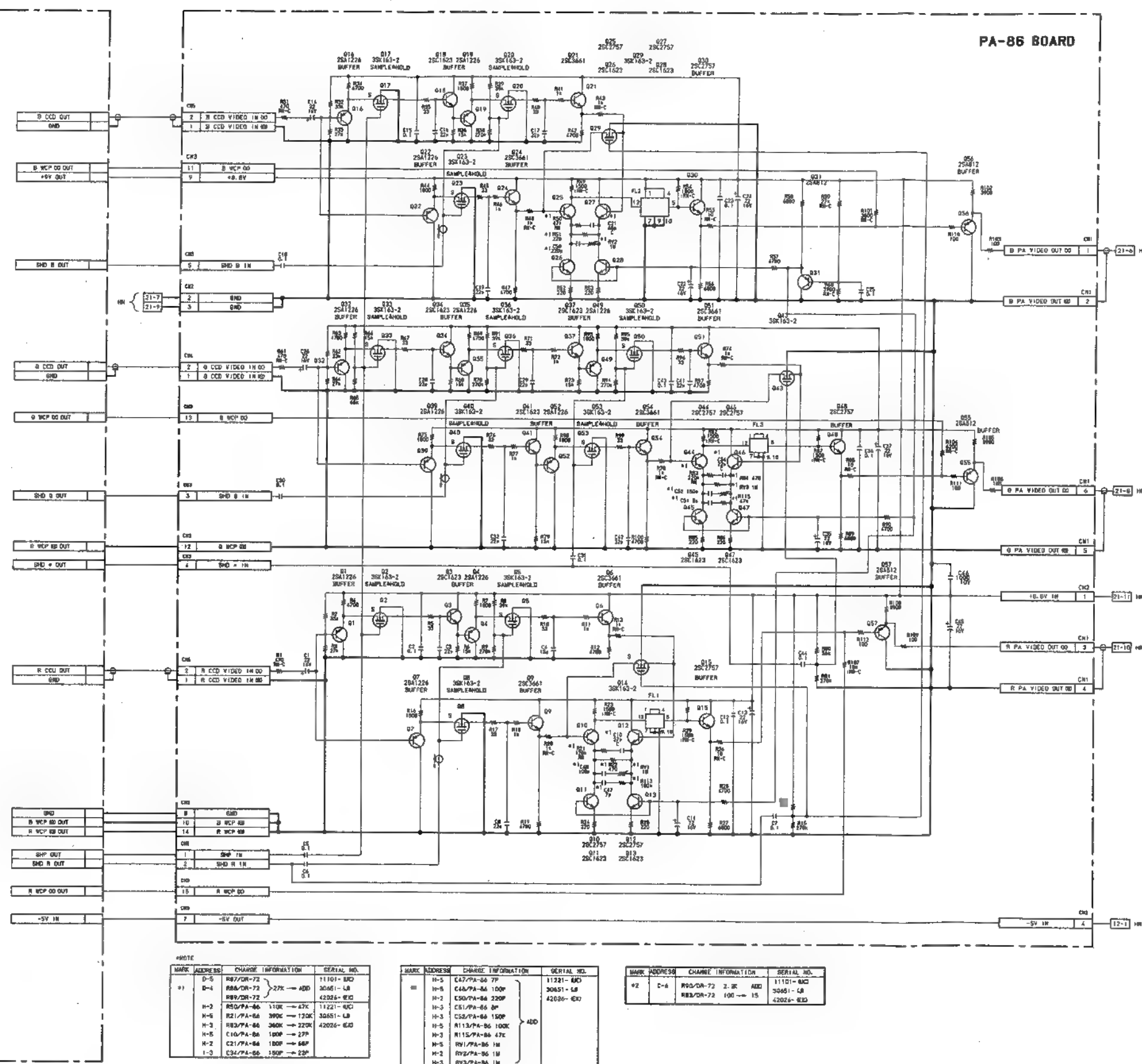
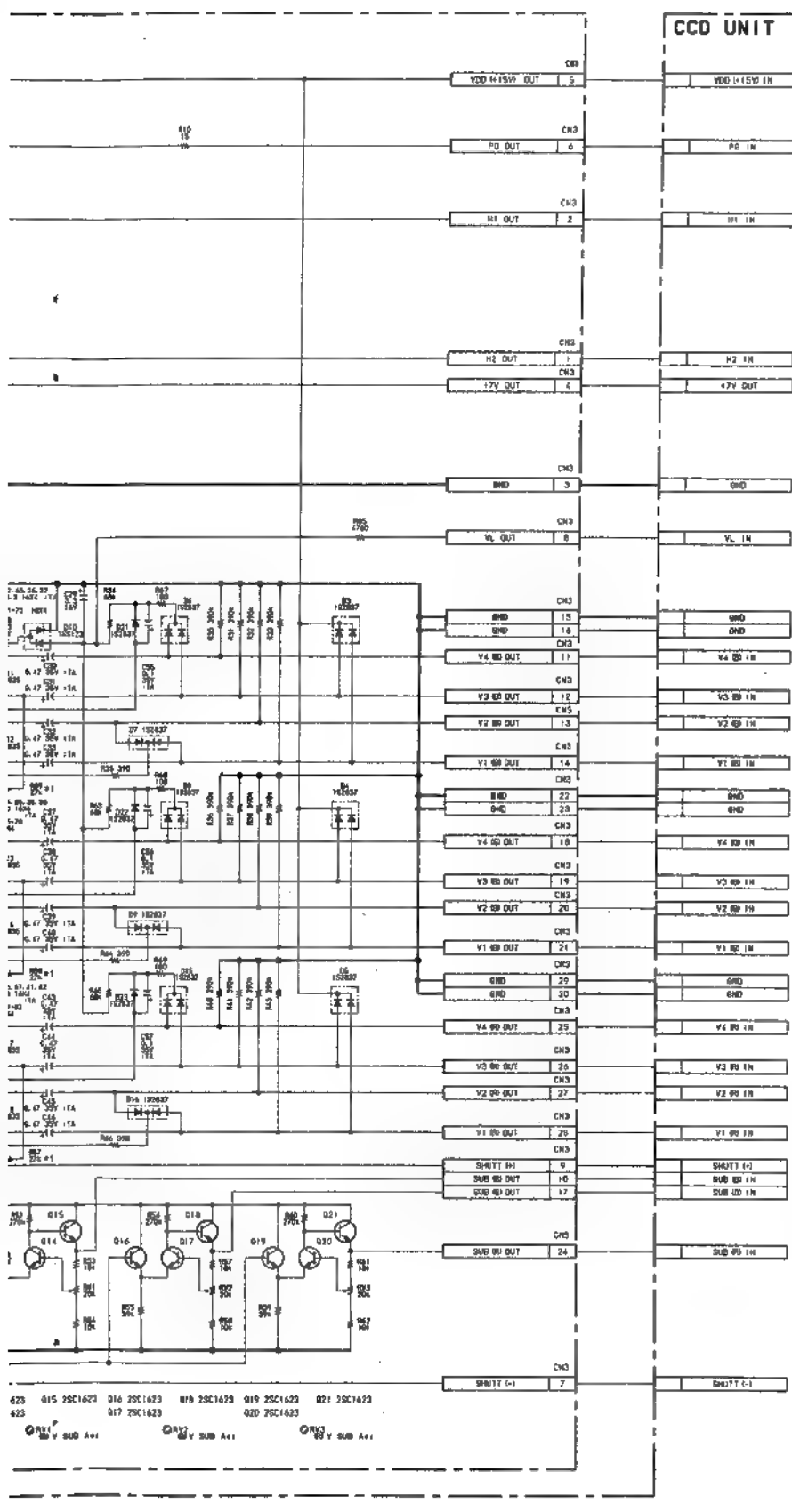
B

C



E

G



C-4

C-5

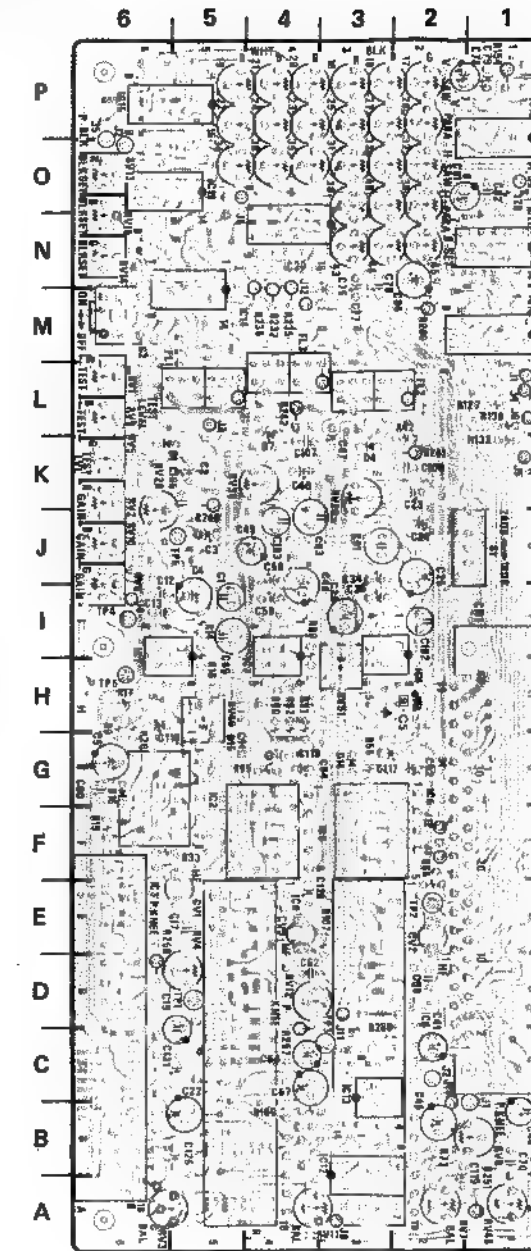
B-BVP7-CCD/BLOCKS

Ser. No. 10001-10130 (UC)
30001-30090 (J)
40001-40050 (EK)

VA-77 VA-

VA-77 1-626-730-11

CN1	F-1	Q31	D-4
CV1	E-5	Q32	D-4
CV2	D-2	Q33	E-1
CV3	D-4	Q34	M-1
		Q35	M-5
		Q36	M-6
D1	K-5	Q37	M-5
D3	G-5	Q39	N-5
D4	K-3	Q40	M-6
D5	F-2	Q41	C-4
D6	D-1	Q42	M-1
D7	K-4	Q43	F-6
D8	F-4	Q44	K-5
D10	M-3		
D11	N-5	RV1	L-6
D14	G-3	RV2	K-6
D15	G-4	RV3	A-5
D16	F-6	RV4	D-5
D30	G-1	RV5	K-6
		RV6	I-6
FL1	L-5	RV7	A-2
FL2	L-2	RV8	B-1
FL3	L-4	RV9	L-6
		RV10	J-6
IC1	H-6	RV11	A-4
IC2	G-5	RV12	D-4
IC3	C-6	RV13	D-6
IC4	H-3	RV14	N-6
IC5	F-2	RV15	N-6
IC6	C-2	RV16	P-3
IC7	H-4	RV17	P-2
IC8	F-4	RV18	P-3
IC9	C-4	RV19	P-5
IC10	C-6	RV20	P-4
IC11	A-5	RV21	P-5
IC12	A-3	RV22	P-5
IC13	B-3	RV23	P-4
IC14	M-5	RV24	P-4
IC15	P-5	RV25	P-3
IC16	P-1	RV26	P-2
IC17	N-1	RV27	P-3
IC18	M-1	RV28	J-6
IC19	O-6	RV29	K-3
IC20	N-4	RV30	K-4
		RV31	O-3
Q1	L-6	RV32	O-2
Q2	K-6	RV33	O-3
Q3	J-6	RV34	O-5
Q4	J-5	RV35	O-4
Q5	H-6	RV36	O-4
Q6	H-5	RV38	O-3
Q8	F-6	RV39	O-2
Q9	E-6	RV40	O-3
Q10	D-6	RV43	N-3
Q11	E-6	RV45	N-2
Q12	M-3	RV46	N-3
Q13	L-3	RV48	A-1
Q14	J-3	RV49	H-5
Q15	J-2	RV51	H-3
Q16	H-3		
Q17	H-2	S1	J-1
Q18	F-2	S2	M-6
Q19	E-2		
Q20	D-3	TP1	D-5
Q21	C-3	TP2	E-2
Q22	D-2	TP3	C-3
Q23	M-4	TP4	I-6
Q24	K-4	TP5	H-6
Q25	J-4	TP6	J-5
Q26	J-4		
Q27	H-4		
Q28	H-4		
Q29	F-4		
Q30	E-4		



1-626-730-11 COMPONENT SIDE

Ser.No.10001-10130 (UC)
30001-30090 (J)
40001-40050 (EK)

VA-77

VA-77

VA-77 1-626-730-11

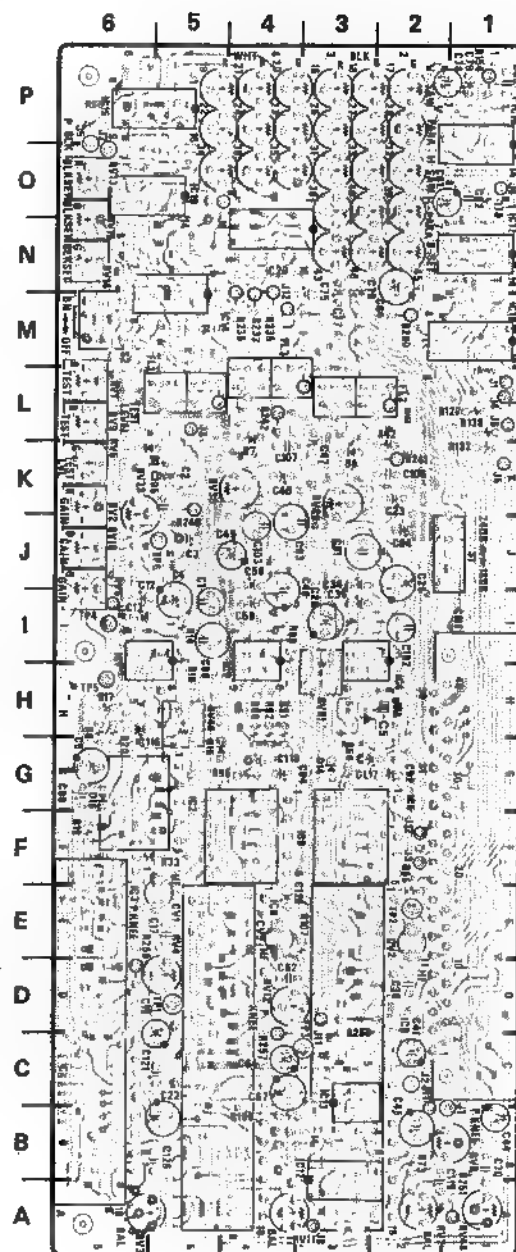
CN1 F-1 Q31 D-4
CV1 E-5 Q32 D-4
CV2 D-2 Q33 E-1
CV3 D-4 Q34 M-1
D1 K-5 Q35 M-5
D3 G-5 Q36 M-6
D4 K-3 Q37 M-5
D5 F-2 Q39 N-5
D6 D-1 Q40 M-6
D7 K-4 Q41 C-4
D8 F-4 Q42 M-1
D10 M-3 Q43 F-6
D11 N-5 Q44 K-5
D14 G-3 RV1 L-6
D15 G-4 RV2 K-6
D16 F-6 RV3 A-5
D30 G-1 RV4 D-5
RV5 K-6
RV6 I-6

FL1 L-5 RV7 A-2
FL2 L-2 RV8 B-1
FL3 L-4 RV9 L-6
RV10 J-6

IC1 H-6 RV11 A-4
IC2 G-5 RV12 D-4
IC3 C-6 RV13 D-6
IC4 H-3 RV14 N-6
IC5 F-2 RV15 N-6
IC6 C-2 RV16 P-3
IC7 H-4 RV17 P-2
IC8 F-4 RV18 P-3
IC9 C-4 RV19 P-5
IC10 C-6 RV20 P-4
IC11 A-5 RV21 P-5
IC12 A-3 RV22 P-5
IC13 B-3 RV23 P-4
IC14 M-5 RV24 P-4
IC15 P-5 RV25 P-3
IC16 P-1 RV26 P-2
IC17 N-1 RV27 P-3
IC18 M-1 RV28 J-6
IC19 O-6 RV29 K-3
IC20 N-4 RV30 K-4

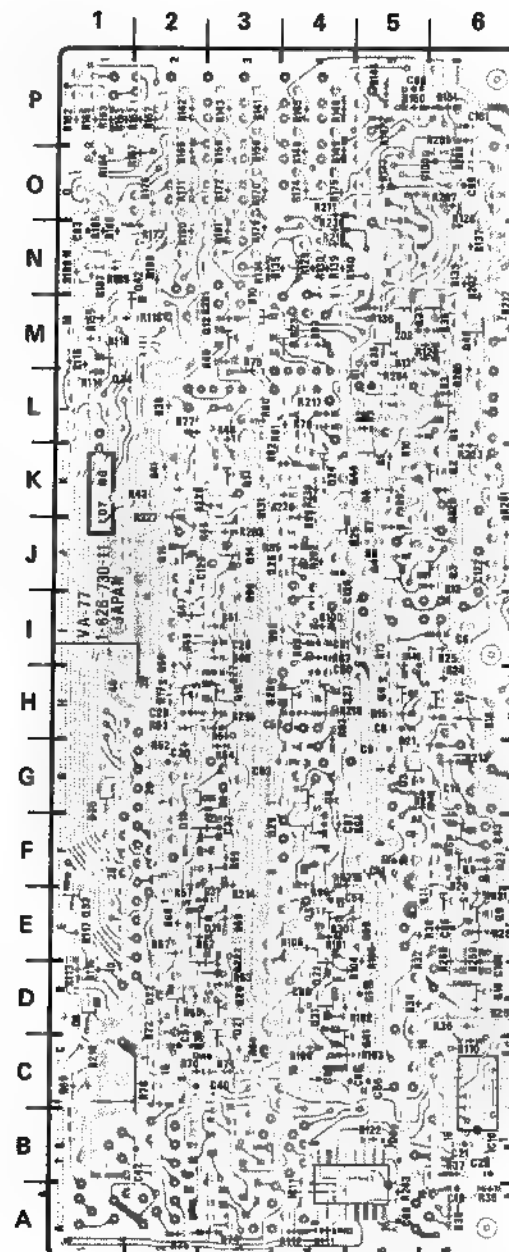
RV31 O-3
Q1 L-6 RV32 O-2
Q2 K-6 RV33 O-3
Q3 J-6 RV34 O-5
Q4 J-5 RV35 O-4
Q5 H-6 RV36 O-4
Q6 H-5 RV38 O-3
Q8 F-6 RV39 O-2
Q9 E-6 RV40 O-3
Q10 D-6 RV43 N-3
Q11 E-6 RV45 N-2
Q12 M-3 RV46 N-3
Q13 L-3 RV48 A-1
Q14 J-3 RV49 H-5
Q15 J-2 RV51 H-3

Q16 H-3
Q17 H-2 S1 J-1
Q18 F-2 S2 M-6
Q19 E-2
Q20 D-3 TP1 D-5
Q21 C-3 TP2 E-2
Q22 D-2 TP3 C-3
Q23 M-4 TP4 I-6
Q24 K-4 TP5 H-6
Q25 J-4 TP6 J-5
Q26 J-4
Q27 H-4
Q28 H-4
Q29 F-4
Q30 E-4



1-626-730-11 COMPONENT SIDE

C-7 (a)



1-626-730-11 SOLDERING SIDE

VA-77 1-626-730-11

CN1 F-1 Q31 D-4
CV1 E-5 Q32 D-4
CV2 D-2 Q33 E-1
CV3 D-4 Q34 M-1
D1 K-5 Q35 M-5
D3 G-5 Q36 M-6
D4 K-3 Q37 M-5
D5 F-2 Q39 N-5
D6 D-1 Q40 M-6
D7 K-4 Q41 C-4
D8 F-4 Q42 M-1
D10 M-3 Q43 F-6
D11 N-5 Q44 K-5
D14 G-3 RV1 L-6
D15 G-4 RV2 K-6
D16 F-6 RV3 A-5
D30 G-1 RV4 D-5
RV5 K-6
RV6 I-6

FL1 L-5 RV7 A-2
FL2 L-2 RV8 B-1
FL3 L-4 RV9 L-6
RV10 J-6

IC1 H-6 RV11 A-4
IC2 G-5 RV12 D-4
IC3 C-6 RV13 D-6
IC4 H-3 RV14 N-6
IC5 F-2 RV15 N-6
IC6 C-2 RV16 P-3
IC7 H-4 RV17 P-2
IC8 F-4 RV18 P-3
IC9 C-4 RV19 P-5
IC10 C-6 RV20 P-4
IC11 A-5 RV21 P-5
IC12 A-3 RV22 P-5
IC13 B-3 RV23 P-4
IC14 M-5 RV24 P-4
IC15 P-5 RV25 P-3
IC16 P-1 RV26 P-2
IC17 N-1 RV27 P-3
IC18 M-1 RV28 J-6
IC19 O-6 RV29 K-3
IC20 N-4 RV30 K-4

RV31 O-3
Q1 L-6 RV32 O-2
Q2 K-6 RV33 O-3
Q3 J-6 RV34 O-5
Q4 J-5 RV35 O-4
Q5 H-6 RV36 O-4
Q6 H-5 RV38 O-3
Q8 F-6 RV39 O-2
Q9 E-6 RV40 O-3
Q10 D-6 RV43 N-3
Q11 E-6 RV45 N-2
Q12 M-3 RV46 N-3
Q13 L-3 RV48 A-1
Q14 J-3 RV49 H-5
Q15 J-2 RV51 H-3

Q16 H-3
Q17 H-2 S1 J-1
Q18 F-2 S2 M-6
Q19 E-2
Q20 D-3 TP1 D-5
Q21 C-3 TP2 E-2
Q22 D-2 TP3 C-3
Q23 M-4 TP4 I-6
Q24 K-4 TP5 H-6
Q25 J-4 TP6 J-5
Q26 J-4
Q27 H-4
Q28 H-4
Q29 F-4
Q30 E-4

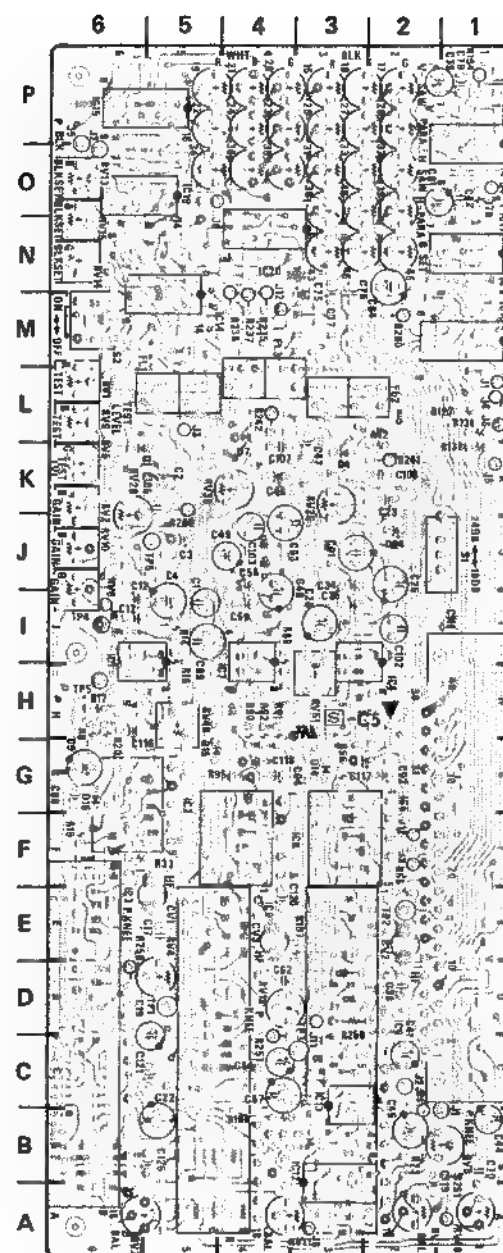
C-8 (a)

BVP-7 (J) 1-R6
BVP-7 (UC) 1-R6
BVP-7P (EK) 1-R5

Ser.No. 10131-10360 (UC)
30091-30190 (J)
40051-40250 (EK)

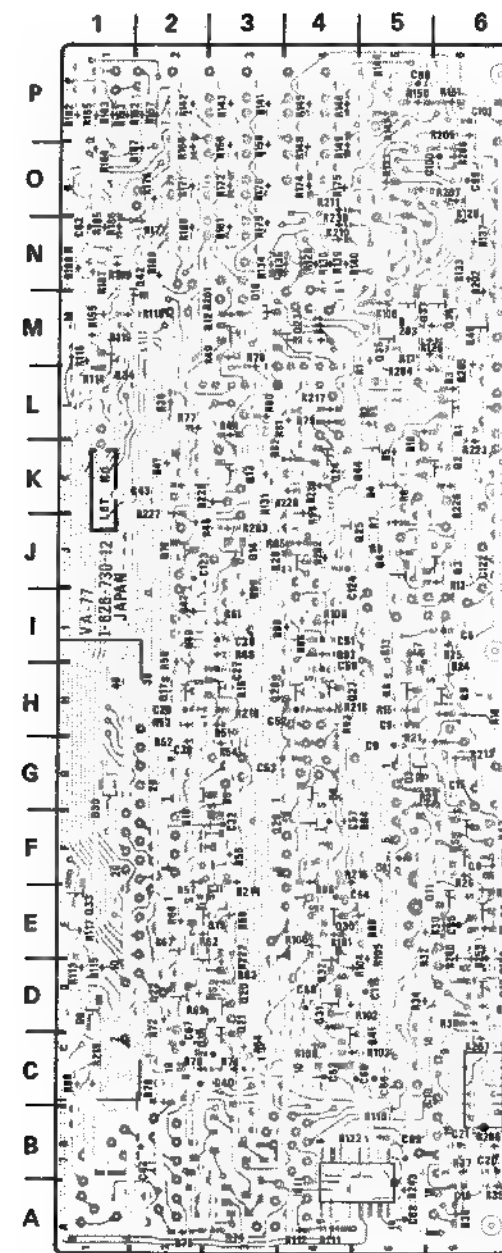
VA-77 1-626-730-12

CN1	F-1	Q31	D-4
		Q32	D-4
CV1	E-5	Q33	E-1
CV2	D-2	Q34	M-1
CV3	D-4	Q35	M-5
		Q36	M-6
D1	K-5	Q37	M-5
D3	G-5	Q39	N-5
D4	K-3	Q40	M-6
D5	F-2	Q41	C-4
D6	D-1	Q42	M-1
D7	K-4	Q43	F-6
D8	F-4	Q44	K-5
D10	M-3		
D11	N-5	RV1	L-6
D14	G-3	RV2	K-6
D15	G-4	RV3	A-5
D16	F-6	RV4	D-5
D30	G-1	RV5	K-6
		RV6	I-6
FL1	L-5	RV7	A-2
FL2	L-2	RV8	B-1
FL3	L-4	RV9	L-6
		RV10	J-6
IC1	H-6	RV11	A-4
IC2	G-5	RV12	D-4
IC3	C-6	RV13	D-6
IC4	H-3	RV14	N-6
IC5	F-2	RV15	N-6
IC6	C-2	RV16	P-3
IC7	H-4	RV17	P-2
IC8	F-4	RV18	P-3
IC9	C-4	RV19	P-5
IC10	C-6	RV20	P-4
IC11	A-5	RV21	P-5
IC12	A-3	RV22	P-5
IC13	B-3	RV23	P-4
IC14	M-5	RV24	P-4
IC15	P-5	RV25	P-3
IC16	P-1	RV26	P-2
IC17	N-1	RV27	P-3
IC18	M-1	RV28	J-6
IC19	D-6	RV29	K-3
IC20	N-4	RV30	K-4
		RV31	O-3
Q1	L-6	RV32	O-2
Q2	K-6	RV33	O-3
Q3	J-6	RV34	O-5
Q4	J-5	RV35	O-4
Q5	H-6	RV36	O-4
Q6	H-5	RV38	O-3
Q8	F-6	RV39	O-2
Q9	E-6	RV40	O-3
Q10	D-6	RV43	N-3
Q11	E-6	RV45	N-2
Q12	M-3	RV46	N-3
Q13	L-3	RV48	A-1
Q14	J-3	RV49	H-5
Q15	J-2	RV51	H-3
Q16	H-3		
Q17	H-2	S1	J-1
Q18	F-2	S2	M-6
Q19	E-2		
Q20	D-3	TP1	D-5
Q21	C-3	TP2	E-2
Q22	D-2	TP3	C-3
Q23	M-4	TP4	I-6
Q24	K-4	TP5	H-6
Q25	J-4	TP6	J-5
Q26	J-4		
Q27	H-4		
Q28	H-4		
Q29	F-4		
Q30	E-4		



1-626-730-12 COMPONENT SIDE

C-7 (b)



1-626-730-12 SOLDERING SIDE

C-8 (b)

VA-77 1-626-730-12

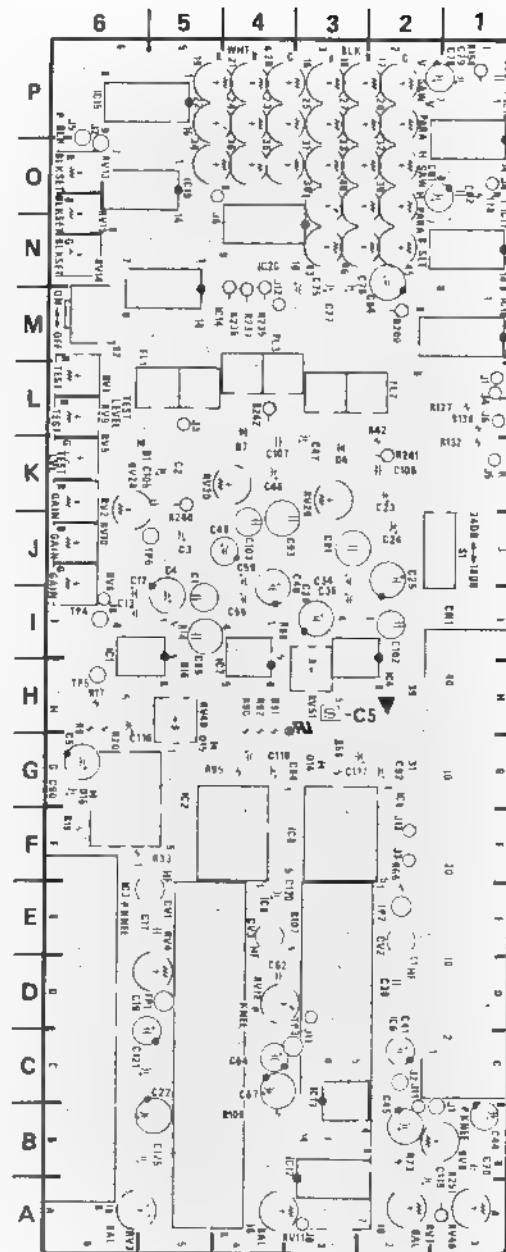
CN1	F-1	Q31	D-4
		Q32	D-4
CV1	E-5	Q33	E-1
CV2	D-2	Q34	M-1
CV3	D-4	Q35	M-5
		Q36	M-6
D1	K-5	Q37	M-5
D3	G-5	Q39	N-5
D4	K-3	Q40	M-6
D5	F-2	Q41	C-4
D6	D-1	Q42	M-1
D7	K-4	Q43	F-6
D8	F-4	Q44	K-5
D10	M-3		
D11	N-5	RV1	L-6
D14	G-3	RV2	K-6
D15	G-4	RV3	A-5
D16	F-6	RV4	D-5
D30	G-1	RV5	K-6
		RV6	I-6
FL1	L-5	RV7	A-2
FL2	L-2	RV8	B-1
FL3	L-4	RV9	L-6
		RV10	J-6
IC1	H-6	RV11	A-4
IC2	G-5	RV12	D-4
IC3	C-6	RV13	D-6
IC4	H-3	RV14	N-6
IC5	F-2	RV15	N-6
IC6	C-2	RV16	P-3
IC7	H-4	RV17	P-2
IC8	F-4	RV18	P-3
IC9	C-4	RV19	P-5
IC10	C-6	RV20	P-4
IC11	A-5	RV21	P-5
IC12	A-3	RV22	P-5
IC13	B-3	RV23	P-4
IC14	M-5	RV24	P-4
IC15	P-5	RV25	P-3
IC16	P-1	RV26	P-2
IC17	N-1	RV27	P-3
IC18	M-1	RV28	J-6
IC19	D-6	RV29	K-3
IC20	N-4	RV30	K-4
		RV31	O-3
Q1	L-6	RV32	O-2
Q2	K-6	RV33	O-3
Q3	J-6	RV34	O-5
Q4	J-5	RV35	O-4
Q5	H-6	RV36	O-4
Q6	H-5	RV38	O-3
Q8	F-6	RV39	O-2
Q9	E-6	RV40	O-3
Q10	D-6	RV43	N-3
Q11	E-6	RV45	N-2
Q12	M-3	RV46	N-3
Q13	L-3	RV48	A-1
Q14	J-3	RV49	H-5
Q15	J-2	RV51	H-3
Q16	H-3		
Q17	H-2	S1	J-1
Q18	F-2	S2	M-6
Q19	E-2		
Q20	D-3	TP1	D-5
Q21	C-3	TP2	E-2
Q22	D-2	TP3	C-3
Q23	M-4	TP4	I-6
Q24	K-4	TP5	H-6
Q25	J-4	TP6	J-5
Q26	J-4		
Q27	H-4		
Q28	H-4		
Q29	F-4		
Q30	E-4		

BVP-7 (J) 1-R6
BVP-7 (UC) 1-R6
BVP-7P (EK) 1-R5

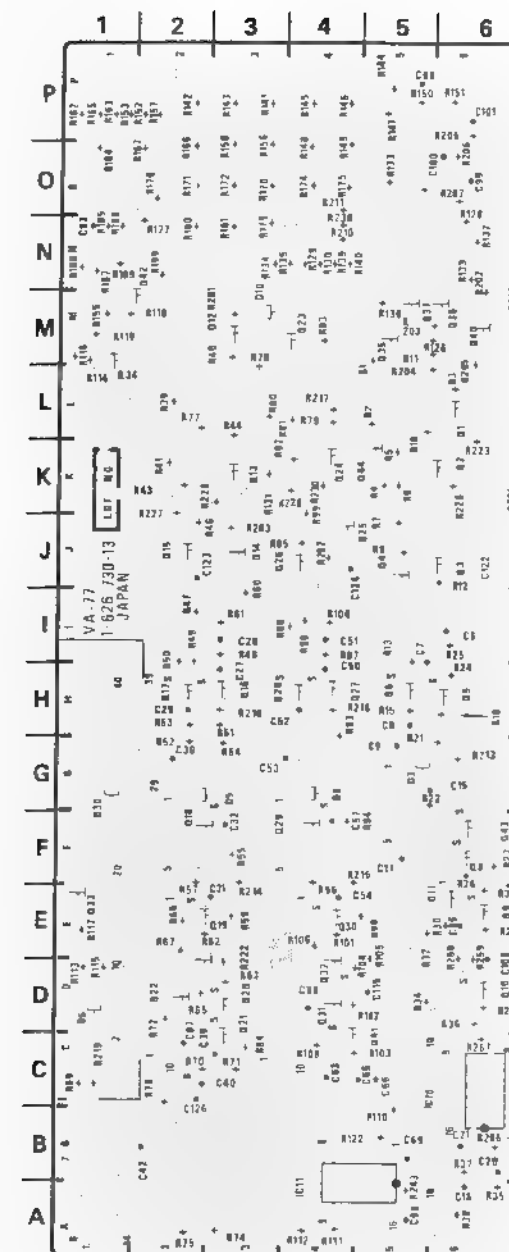
Ser. No. 10361-11220 BVP-7 (UC)
30191-30650 BVP-7 (J)
40251-42025 BVP-7P (EK)

VA-77 1-626-730-13

CN1	F-1	Q31	D-4
		Q32	D-4
CV1	E-5	Q33	E-1
CV2	D-2	Q34	M-1
CV3	D-4	Q35	M-5
		Q36	M-6
D1	K-5	Q37	M-5
D3	G-5	Q39	N-5
D4	K-3	Q40	M-6
D5	F-2	Q41	C-4
D6	D-1	Q42	M-1
D7	K-4	Q43	F-6
D8	F-4	Q44	K-5
D10	M-3		
D11	N-5	RV1	L-6
D14	G-3	RV2	K-6
D15	G-4	RV3	A-5
D16	F-6	RV4	D-5
D30	G-1	RV5	K-6
		RV6	I-6
FL1	L-5	RV7	A-2
FL2	L-2	RV8	B-1
FL3	L-4	RV9	L-6
		RV10	J-6
IC1	H-6	RV11	A-4
IC2	G-5	RV12	D-4
IC3	C-6	RV13	D-6
IC4	H-3	RV14	N-6
IC5	F-2	RV15	N-6
IC6	C-2	RV16	P-3
IC7	H-4	RV17	P-2
IC8	F-4	RV18	P-3
IC9	C-4	RV19	P-5
IC10	C-6	RV20	P-4
IC11	A-5	RV21	P-5
IC12	A-3	RV22	P-5
IC13	B-3	RV23	P-4
IC14	M-5	RV24	P-4
IC15	P-5	RV25	P-3
IC16	P-1	RV26	P-2
IC17	N-1	RV27	P-3
IC18	M-1	RV28	J-6
IC19	O-6	RV29	K-3
IC20	N-4	RV30	K-4
		RV31	O-3
Q1	L-6	RV32	O-2
Q2	K-6	RV33	O-3
Q3	J-6	RV34	O-5
Q4	J-5	RV35	O-4
Q5	H-6	RV36	O-4
Q6	H-5	RV38	O-3
Q8	F-6	RV39	O-2
Q9	E-6	RV40	O-3
Q10	D-6	RV43	N-3
Q11	E-6	RV45	N-2
Q12	M-3	RV46	N-3
Q13	L-3	RV48	A-1
Q14	J-3	RV49	H-5
Q15	J-2	RV51	H-3
Q16	H-3		
Q17	H-2	S1	J-1
Q18	F-2	S2	M-6
Q19	E-2		
Q20	D-3	TP1	D-5
Q21	C-3	TP2	E-2
Q22	D-2	TP3	C-3
Q23	M-4	TP4	I-6
Q24	K-4	TP5	H-6
Q25	J-4	TP6	J-5
Q26	J-4		
Q27	H-4		
Q28	H-4		
Q29	F-4		
Q30	E-4		



C-7 (c)



C-8 (c)

VA-77 1-626-730-13

CN1	F-1	Q31	D-4
		Q32	D-4
CV1	E-5	Q33	E-1
CV2	D-2	Q34	M-1
CV3	D-4	Q35	M-5
		Q36	M-6
D1	K-5	Q37	M-5
D3	G-5	Q39	N-5
D4	K-3	Q40	M-6
D5	F-2	Q41	C-4
D6	D-1	Q42	M-1
D7	K-4	Q43	F-6
D8	F-4	Q44	K-5
D10	M-3		
D11	N-5	RV1	L-6
D14	G-3	RV2	K-6
D15	G-4	RV3	A-5
D16	F-6	RV4	D-5
D30	G-1	RV5	K-6
		RV6	I-6
FL1	L-5	RV7	A-2
FL2	L-2	RV8	B-1
FL3	L-4	RV9	L-6
		RV10	J-6
IC1	H-6	RV11	A-4
IC2	G-5	RV12	D-4
IC3	C-6	RV13	D-6
IC4	H-3	RV14	N-6
IC5	F-2	RV15	N-6
IC6	C-2	RV16	P-3
IC7	H-4	RV17	P-2
IC8	F-4	RV18	P-3
IC9	C-4	RV19	P-5
IC10	C-6	RV20	P-4
IC11	A-5	RV21	P-5
IC12	A-3	RV22	P-5
IC13	B-3	RV23	P-4
IC14	M-5	RV24	P-4
IC15	P-5	RV25	P-3
IC16	P-1	RV26	P-2
IC17	N-1	RV27	P-3
IC18	M-1	RV28	J-6
IC19	O-6	RV29	K-3
IC20	N-4	RV30	K-4
		RV31	O-3
Q1	L-6	RV32	O-2
Q2	K-6	RV33	O-3
Q3	J-6	RV34	O-5
Q4	J-5	RV35	O-4
Q5	H-6	RV36	O-4
Q6	H-5	RV38	O-3
Q8	F-6	RV39	O-2
Q9	E-6	RV40	O-3
Q10	D-6	RV43	N-3
Q11	E-6	RV45	N-2
Q12	M-3	RV46	N-3
Q13	L-3	RV48	A-1
Q14	J-3	RV49	H-5
Q15	J-2	RV51	H-3
Q16	H-3		
Q17	H-2	S1	J-1
Q18	F-2	S2	M-6
Q19	E-2		
Q20	D-3	TP1	D-5
Q21	C-3	TP2	E-2
Q22	D-2	TP3	C-3
Q23	M-4	TP4	I-6
Q24	K-4	TP5	H-6
Q25	J-4	TP6	J-5
Q26	J-4		
Q27	H-4		
Q28	H-4		
Q29	F-4		
Q30	E-4		

BVP-7 (J) 1-R6
BVP-7 (UC) 1-R6
BVP-7P (EK) 1-R5

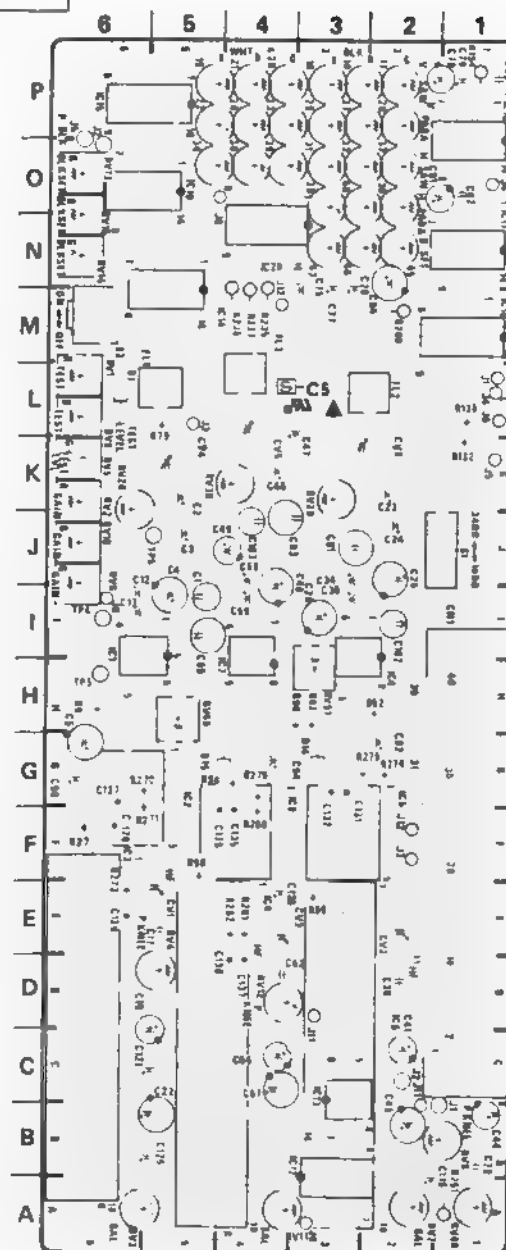
Ser. No. 11221- BVP-7 (UC)
30651- BVP-7 (J)
42026- BVP-7P (EK)
10001- BVP-7000HS (UC)
30026- BVP-7000HS (J)
40001- BVP-7000HSP (EK)

VA-77 1-626-730-14

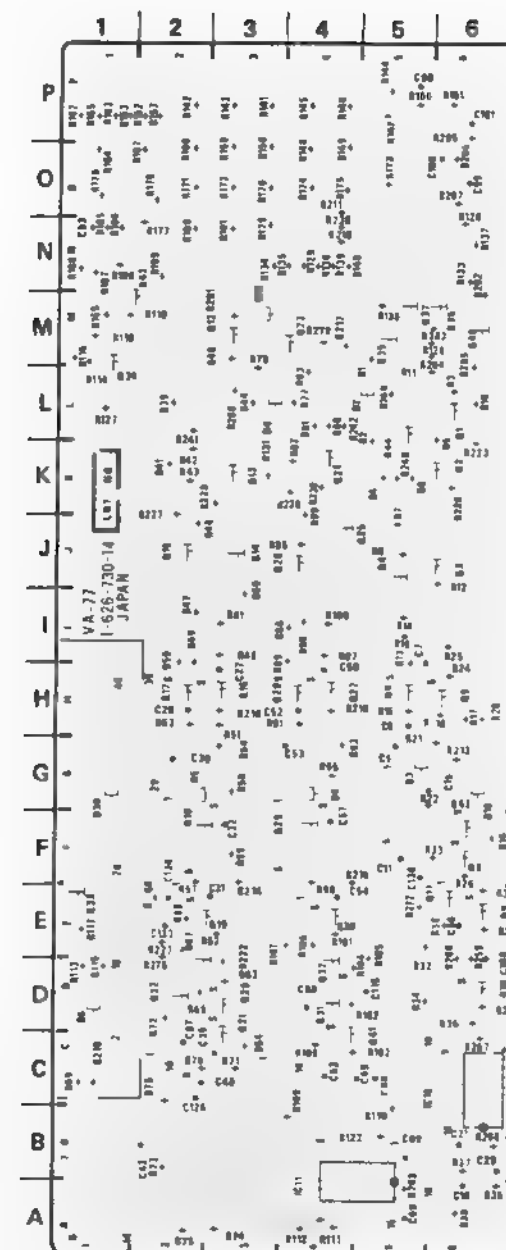
CN1	F-1	Q1	L-6	RV1	L-6
		Q2	K-6	RV2	K-6
CV1	E-5	Q3	J-6	RV3	A-5
CV2	D-2	Q4	J-5	RV4	D-5
CV3	D-4	Q5	H-6	RV5	K-6
		Q6	H-5	RV6	I-6
D1	K-5	Q8	F-6	RV7	A-2
D3	G-5	Q9	E-6	RV8	B-1
D4	K-3	Q10	D-6	RV9	L-6
D5	F-2	Q11	E-6	RV10	J-6
D6	D-1	Q12	M-3	RV11	A-4
D7	K-4	Q13	L-3	RV12	D-4
D8	F-4	Q14	J-3	RV13	D-6
D10	M-3	Q15	J-2	RV14	N-6
D11	N-5	Q16	H-3	RV15	N-6
D14	G-3	Q17	H-2	RV16	P-3
D15	G-4	Q18	F-2	RV17	P-2
D16	F-6	Q19	E-2	RV18	P-3
D30	G-1	Q20	D-3	RV19	P-5
		Q21	C-3	RV20	P-4
FL1	L-5	Q22	D-2	RV21	P-5
FL2	L-2	Q23	M-4	RV22	P-5
FL3	L-4	Q24	K-4	RV23	P-4
		Q25	J-4	RV24	P-4
IC1	H-6	Q26	J-4	RV25	P-3
IC2	G-5	Q27	H-4	RV26	P-2
IC3	C-6	Q28	H-4	RV27	P-3
IC4	H-3	Q29	F-4	RV28	J-6
IC5	F-2	Q30	E-4	RV29	K-3
IC6	C-2	Q31	D-4	RV30	K-4
IC7	H-4	Q32	D-4	RV31	O-3
IC8	F-4	Q33	E-1	RV32	O-2
IC9	C-4	Q34	M-1	RV33	O-3
IC10	C-6	Q35	M-5	RV34	O-5
IC11	A-5	Q36	M-6	RV35	O-4
IC12	A-3	Q37	M-5	RV36	O-4
IC13	B-3	Q39	N-5	RV38	O-3
IC14	M-5	Q40	M-6	RV39	O-2
IC15	P-5	Q41	C-4	RV40	O-3
IC16	P-1	Q42	M-1	RV43	N-3
IC17	N-1	Q43	F-6	RV45	N-2
IC18	M-1	Q44	K-5	RV46	N-3
IC19	O-6			RV48	A-1
IC20	N-4			RV49	H-5
				RV51	H-3

S1 J-1
S2 M-6

TP1 D-5
TP2 E-2
TP3 C-3
TP4 I-6
TP5 H-6
TP6 J-5



C-7 (d)



VA-77 1-626-730-14

CN1	F-1	Q1	L-6	RV1	L-6
		Q2	K-6	RV2	K-6
CV1	E-5	Q3	J-6	RV3	A-5
CV2	D-2	Q4	J-5	RV4	D-5
CV3	D-4	Q5	H-6	RV5	K-6
		Q6	H-5	RV6	I-6
D1	K-5	Q8	F-6	RV7	A-2
D3	G-5	Q9	E-6	RV8	B-1
D4	K-3	Q10	D-6	RV9	L-6
D5	F-2	Q11	E-6	RV10	J-6
D6	D-1	Q12	M-3	RV11	A-4
D7	K-4	Q13	L-3	RV12	D-4
D8	F-4	Q14	J-3	RV13	D-6
D10	M-3	Q15	J-2	RV14	N-6
D11	N-5	Q16	H-3	RV15	N-6
D14	G-3	Q17	H-2	RV16	P-3
D15	G-4	Q18	F-2	RV17	P-2
D16	F-6	Q19	E-2	RV18	P-3
D30	G-1	Q20	D-3	RV19	P-5
		Q21	C-3	RV20	P-4
FL1	L-5	Q22	D-2	RV21	P-5
FL2	L-2	Q23	M-4	RV22	P-5
FL3	L-4	Q24	K-4	RV23	P-4
		Q25	J-4	RV24	P-4
IC1	H-6	Q26	J-4	RV25	P-3
IC2	G-5	Q27	H-4	RV26	P-2
IC3	C-6	Q28	H-4	RV27	P-3
IC4	H-3	Q29	F-4	RV28	J-6
IC5	F-2	Q30	E-4	RV29	K-3
IC6	C-2	Q31	D-4	RV30	K-4
IC7	H-4	Q32	D-4	RV31	O-3
IC8	F-4	Q33	E-1	RV32	O-2
IC9	C-4	Q34	M-1	RV33	O-3
IC10	C-6	Q35	M-5	RV34	O-5
IC11	A-5	Q36	M-6	RV35	O-4
IC12	A-3	Q37	M-5	RV36	O-4
IC13	B-3	Q39	N-5	RV38	O-3
IC14	M-5	Q40	M-6	RV39	O-2
IC15	P-5	Q41	C-4	RV40	O-3
IC16	P-1	Q42	M-1	RV43	N-3
IC17	N-1	Q43	F-6	RV45	N-2
IC18	M-1	Q44	K-5	RV46	N-3
IC19	O-6			RV48	A-1
IC20	N-4			RV49	H-5
				RV51	H-3

S1 J-1
S2 M-6

TP1 D-5
TP2 E-2
TP3 C-3
TP4 I-6
TP5 H-6
TP6 J-5

C-8 (d)

BVP-7 (J) 1-R7
BVP-7 (UC) 1-R7
BVP-7P (EK) 1-R6
BVP-7000HS (J) 1-R2
BVP-7000HS (UC) 1ST
BVP-7000HSP (EK) 1ST

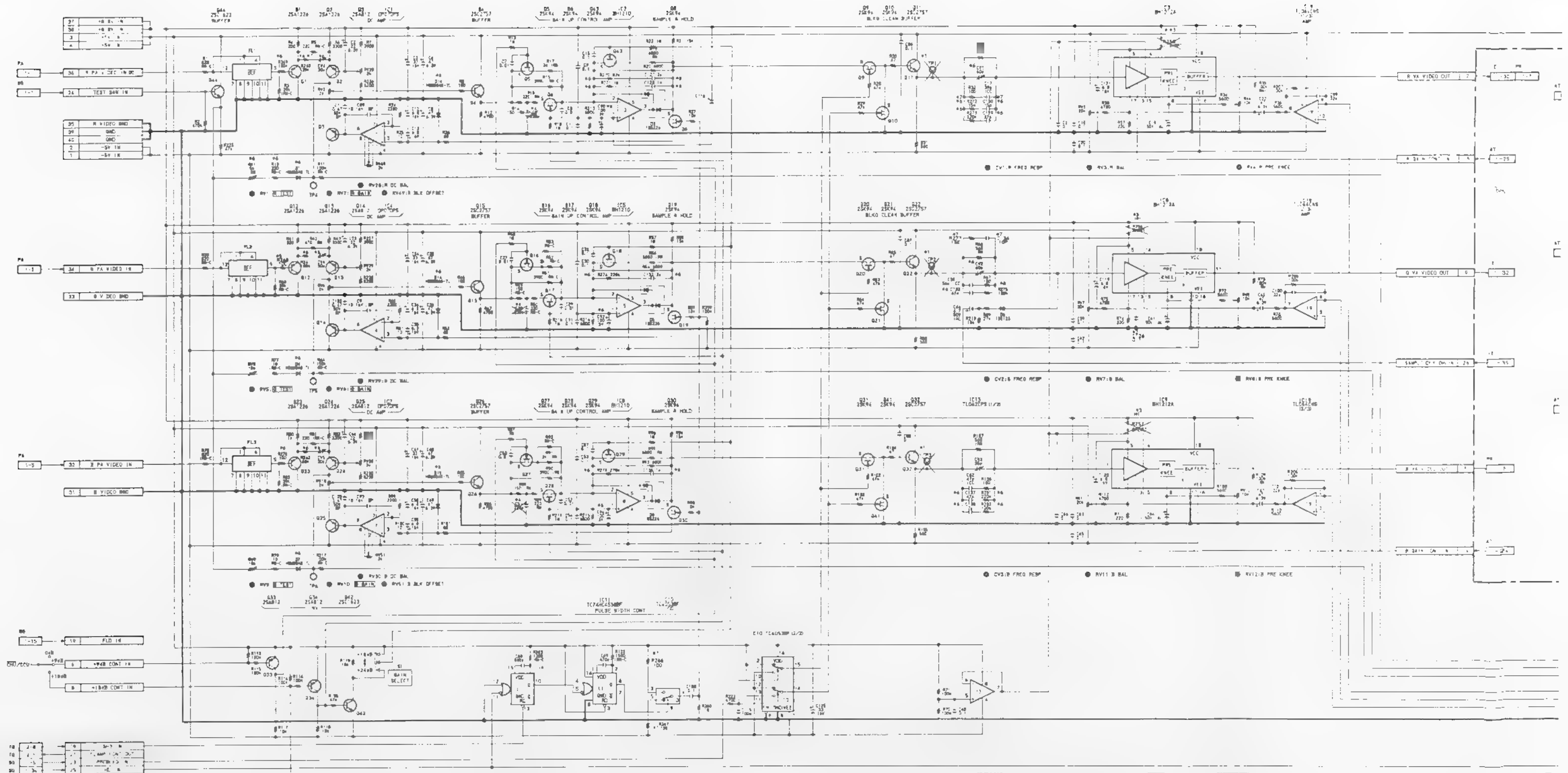
VA-77 BOARD
VIDEO AMPLIFIER

VA-77

VA-77

NOTE

NAME	1-00000
REV	0000
DATE	0000
BY	0000
CHKD	0000
APPD	0000
TEST	0000
ASSEMBLY	0000
SHIP	0000



BVP-7 (U) 1 R7
BVP-7 (U) 1 R7
BVP-7 (U) 1 R6
BVP-7 (U) 1 R6
BVP-7 (U) 1 R6
BVP-7 (U) 1 R6
BVP-7 (U) 1 R6
BVP-7 (U) 1 R6

C-9

C-10

A | B | C | D | E | F | G

VA-77

VA-77

NOTE

SAME	CHANGE	W/REMARKS	DATE	BY
R240 1M	50	100K	10/1/77	WV
R241 1M	22K	100K	10/1/77	WV
R242 1M	22K	100K	10/1/77	WV
R243 1M	22K	100K	10/1/77	WV
R244 1M	22K	100K	10/1/77	WV
R245 1M	22K	100K	10/1/77	WV
R246 1M	22K	100K	10/1/77	WV
R247 1M	22K	100K	10/1/77	WV
R248 1M	22K	100K	10/1/77	WV
R249 1M	22K	100K	10/1/77	WV
R250 1M	22K	100K	10/1/77	WV
R251 1M	22K	100K	10/1/77	WV
R252 1M	22K	100K	10/1/77	WV
R253 1M	22K	100K	10/1/77	WV
R254 1M	22K	100K	10/1/77	WV
R255 1M	22K	100K	10/1/77	WV
R256 1M	22K	100K	10/1/77	WV
R257 1M	22K	100K	10/1/77	WV
R258 1M	22K	100K	10/1/77	WV
R259 1M	22K	100K	10/1/77	WV
R260 1M	22K	100K	10/1/77	WV

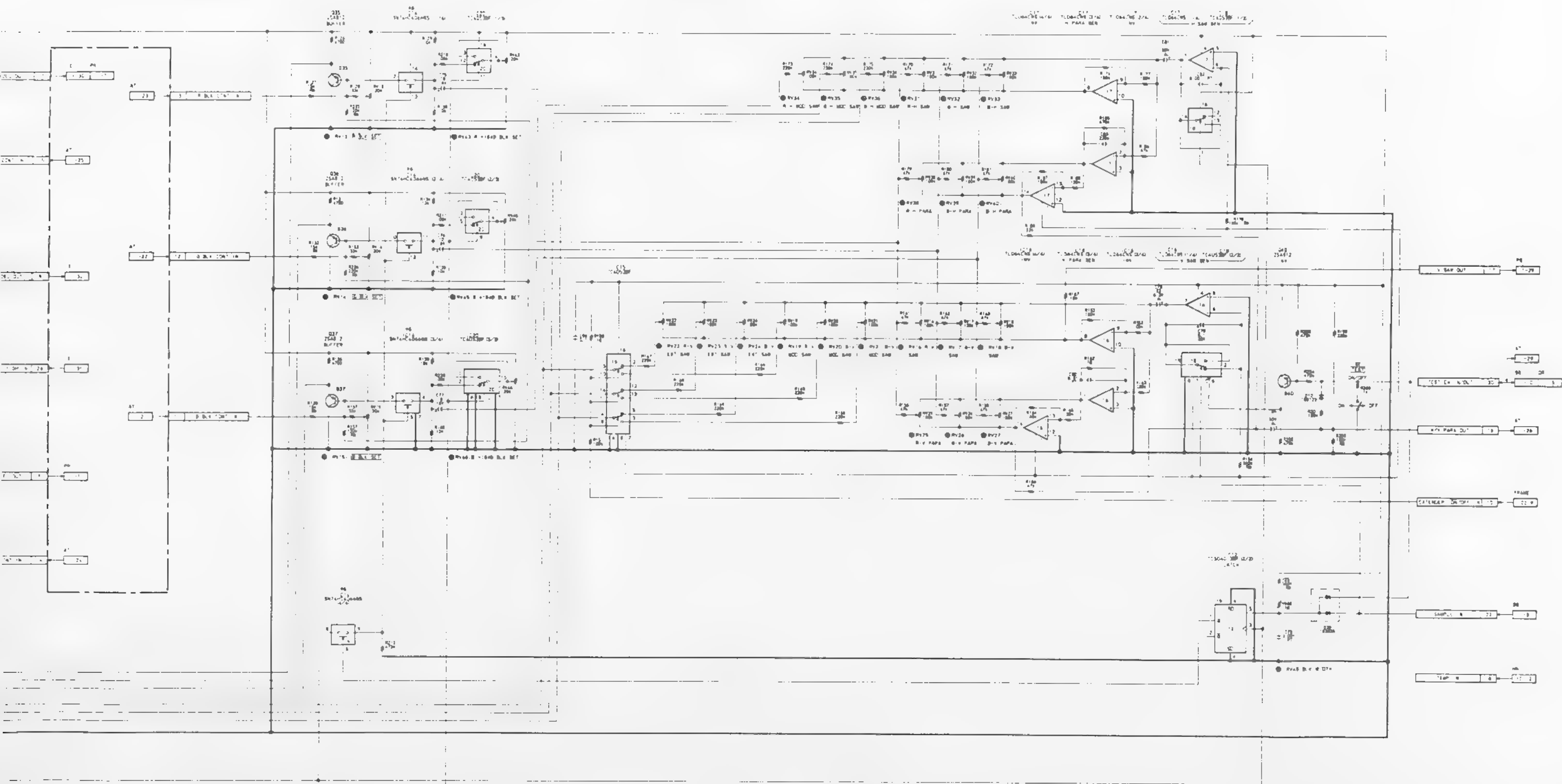
SAME	CHANGE	W/REMARKS	DATE	BY
R261 1M	22K	100K	10/1/77	WV
R262 1M	22K	100K	10/1/77	WV
R263 1M	22K	100K	10/1/77	WV
R264 1M	22K	100K	10/1/77	WV
R265 1M	22K	100K	10/1/77	WV
R266 1M	22K	100K	10/1/77	WV
R267 1M	22K	100K	10/1/77	WV
R268 1M	22K	100K	10/1/77	WV
R269 1M	22K	100K	10/1/77	WV
R270 1M	22K	100K	10/1/77	WV
R271 1M	22K	100K	10/1/77	WV
R272 1M	22K	100K	10/1/77	WV
R273 1M	22K	100K	10/1/77	WV
R274 1M	22K	100K	10/1/77	WV
R275 1M	22K	100K	10/1/77	WV
R276 1M	22K	100K	10/1/77	WV
R277 1M	22K	100K	10/1/77	WV
R278 1M	22K	100K	10/1/77	WV
R279 1M	22K	100K	10/1/77	WV
R280 1M	22K	100K	10/1/77	WV

SAME	CHANGE	W/REMARKS	DATE	BY
R281 1M	22K	100K	10/1/77	WV
R282 1M	22K	100K	10/1/77	WV
R283 1M	22K	100K	10/1/77	WV
R284 1M	22K	100K	10/1/77	WV
R285 1M	22K	100K	10/1/77	WV
R286 1M	22K	100K	10/1/77	WV
R287 1M	22K	100K	10/1/77	WV
R288 1M	22K	100K	10/1/77	WV
R289 1M	22K	100K	10/1/77	WV
R290 1M	22K	100K	10/1/77	WV
R291 1M	22K	100K	10/1/77	WV
R292 1M	22K	100K	10/1/77	WV
R293 1M	22K	100K	10/1/77	WV
R294 1M	22K	100K	10/1/77	WV
R295 1M	22K	100K	10/1/77	WV
R296 1M	22K	100K	10/1/77	WV
R297 1M	22K	100K	10/1/77	WV
R298 1M	22K	100K	10/1/77	WV
R299 1M	22K	100K	10/1/77	WV
R300 1M	22K	100K	10/1/77	WV

SAME	CHANGE	W/REMARKS	DATE	BY
R301 1M	22K	100K	10/1/77	WV
R302 1M	22K	100K	10/1/77	WV
R303 1M	22K	100K	10/1/77	WV
R304 1M	22K	100K	10/1/77	WV
R305 1M	22K	100K	10/1/77	WV
R306 1M	22K	100K	10/1/77	WV
R307 1M	22K	100K	10/1/77	WV
R308 1M	22K	100K	10/1/77	WV
R309 1M	22K	100K	10/1/77	WV
R310 1M	22K	100K	10/1/77	WV
R311 1M	22K	100K	10/1/77	WV
R312 1M	22K	100K	10/1/77	WV
R313 1M	22K	100K	10/1/77	WV
R314 1M	22K	100K	10/1/77	WV
R315 1M	22K	100K	10/1/77	WV
R316 1M	22K	100K	10/1/77	WV
R317 1M	22K	100K	10/1/77	WV
R318 1M	22K	100K	10/1/77	WV
R319 1M	22K	100K	10/1/77	WV
R320 1M	22K	100K	10/1/77	WV

SAME	CHANGE	W/REMARKS	DATE	BY
R321 1M	22K	100K	10/1/77	WV
R322 1M	22K	100K	10/1/77	WV
R323 1M	22K	100K	10/1/77	WV
R324 1M	22K	100K	10/1/77	WV
R325 1M	22K	100K	10/1/77	WV
R326 1M	22K	100K	10/1/77	WV
R327 1M	22K	100K	10/1/77	WV
R328 1M	22K	100K	10/1/77	WV
R329 1M	22K	100K	10/1/77	WV
R330 1M	22K	100K	10/1/77	WV
R331 1M	22K	100K	10/1/77	WV
R332 1M	22K	100K	10/1/77	WV
R333 1M	22K	100K	10/1/77	WV
R334 1M	22K	100K	10/1/77	WV
R335 1M	22K	100K	10/1/77	WV
R336 1M	22K	100K	10/1/77	WV
R337 1M	22K	100K	10/1/77	WV
R338 1M	22K	100K	10/1/77	WV
R339 1M	22K	100K	10/1/77	WV
R340 1M	22K	100K	10/1/77	WV

SAME	CHANGE	W/REMARKS	DATE	BY
R341 1M	22K	100K	10/1/77	WV
R342 1M	22K	100K	10/1/77	WV
R343 1M	22K	100K	10/1/77	WV
R344 1M	22K	100K	10/1/77	WV
R345 1M	22K	100K	10/1/77	WV
R346 1M	22K	100K	10/1/77	WV
R347 1M	22K	100K	10/1/77	WV
R348 1M	22K	100K	10/1/77	WV
R349 1M	22K	100K	10/1/77	WV
R350 1M	22K	100K	10/1/77	WV
R351 1M	22K	100K	10/1/77	WV
R352 1M	22K	100K	10/1/77	WV
R353 1M	22K	100K	10/1/77	WV
R354 1M	22K	100K	10/1/77	WV
R355 1M	22K	100K	10/1/77	WV
R356 1M	22K	100K	10/1/77	WV
R357 1M	22K	100K	10/1/77	WV
R358 1M	22K	100K	10/1/77	WV
R359 1M	22K	100K	10/1/77	WV
R360 1M	22K	100K	10/1/77	WV



C-11

C-12

G

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I

J

K

L

M

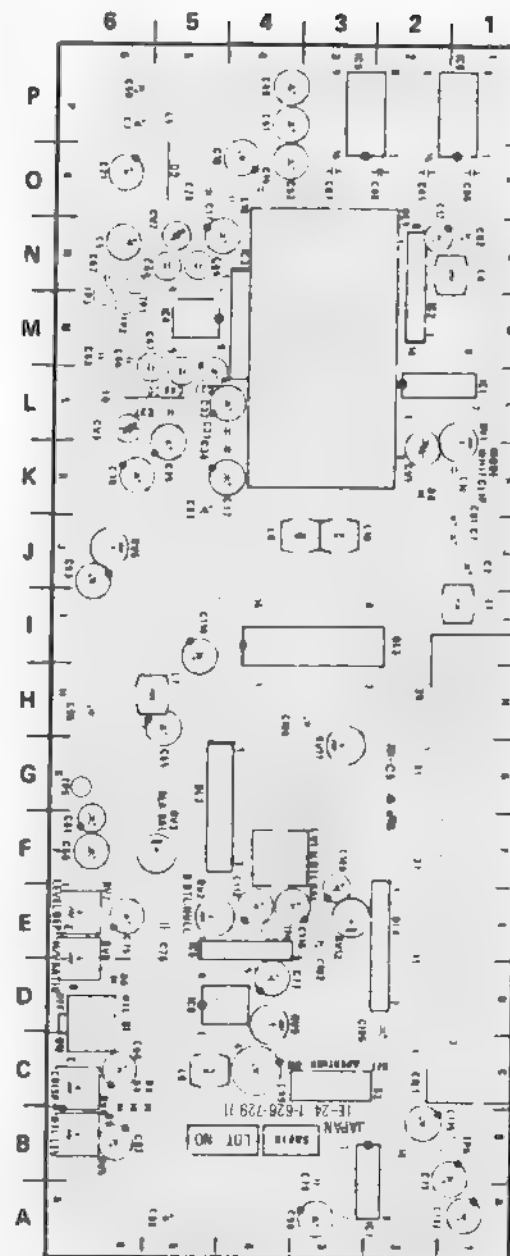
R-3VP7-1/2/77MS

Ser.No.10001-10290 (UC)
30001-30160 (J)
40001-40200 (EK)

IE-24/24P IE-24/24P

IE-24/24P I-626-729-II

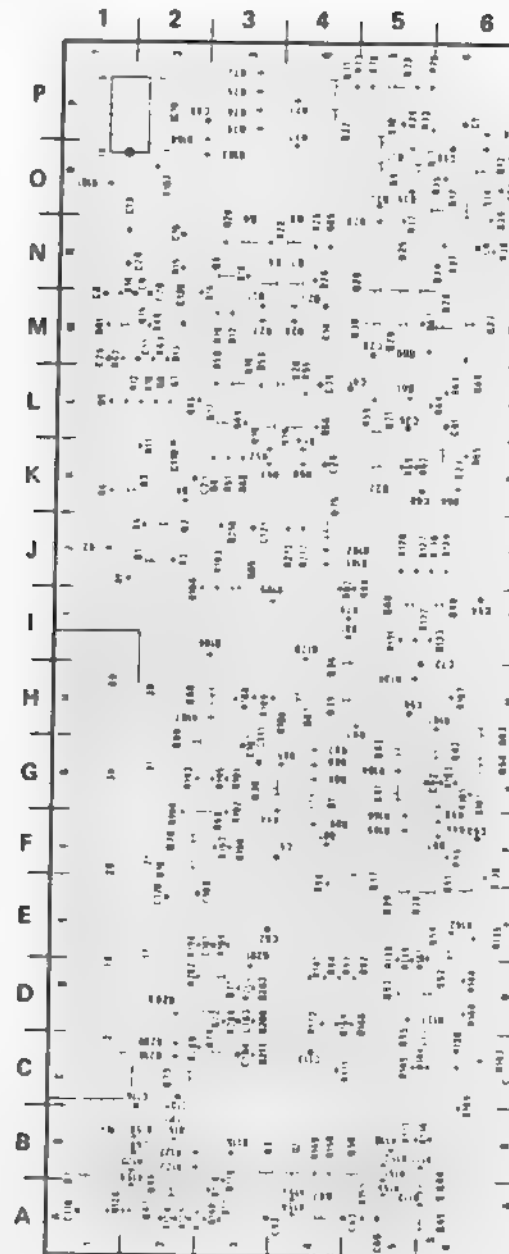
CN1 C-2 Q31 P-4
CV1 K-2 Q32 P-4
CV2 N-5 Q33 P-5
CV3 L-6 Q34 H-4
D1 G-4 Q35 H-4
D2 B-4 Q36 G-3
D3 B-4 Q37 F-5
D4 C-6 Q38 E-5
D5 B-6 Q39 E-5
D6 D-6 Q40 G-5
D7 B-1 Q41 A-6
D8 K-2 Q42 A-6
D9 C-5 Q43 A-2
D10 F-2 Q44 A-2
DL1 O-2 Q45 I-5
DL2 G-5 Q46 I-6
DL3 I-2 Q47 G-6
DL4 E-2 Q48 D-6
IC1 L-1 Q49 E-6
IC2 M-2 Q50 C-5
IC3 N-4 Q51 B-5
IC4 M-5 Q52 A-4
IC5 E-5 Q53 H-6
IC6 D-5 Q54 J-3
IC7 A-2 Q55 H-2
IC8 P-1 Q56 H-4
IC9 P-3 Q57 F-3
IC10 P-2 Q58 G-2
LV1 F-3 Q59 D-3
Q1 J-2 Q70 C-2
Q2 J-2 Q71 C-3
Q3 K-2 Q72 K-4
Q4 N-3 RV1 L-1
Q5 N-3 RV2 E-5
Q6 M-4 RV3 F-5
Q7 N-4 RV4 C-6
Q8 O-5 RV5 B-6
Q9 P-5 RV6 J-6
Q10 O-5 RV7 E-6
Q11 O-6 RV8 E-6
Q12 O-6 RV9 D-3
Q13 O-6 RV10 G-3
Q14 M-2 RV11 E-3
Q15 L-3 S1 D-6
Q16 L-3 S2 C-2
Q17 L-4 TP1 M-6
Q18 L-5 TP2 M-6
Q19 K-5 TP3 M-6
Q20 K-6 TP4 E-4
Q21 N-6 TP5 G-6
Q22 N-5 TP6 B-1
Q23 N-4
Q24 M-6
Q25 M-5
Q26 M-4



C-15 (a)

IE-24/24P I-626-729-II

CN1 C-2 Q31 P-4
CV1 K-2 Q32 P-4
CV2 N-5 Q33 P-5
CV3 L-6 Q34 H-4
D1 G-4 Q35 H-4
D2 B-4 Q36 G-3
D3 B-4 Q37 F-5
D4 C-6 Q38 E-5
D5 B-6 Q39 E-5
D6 D-6 Q40 G-5
D7 B-1 Q41 A-6
D8 K-2 Q42 A-6
D9 C-5 Q43 A-2
D10 F-2 Q44 A-2
DL1 O-2 Q45 I-5
DL2 G-5 Q46 I-6
DL3 I-2 Q47 G-6
DL4 E-2 Q48 D-6
IC1 L-1 Q49 E-6
IC2 M-2 Q50 C-5
IC3 N-4 Q51 B-5
IC4 M-5 Q52 A-4
IC5 E-5 Q53 H-6
IC6 D-5 Q54 J-3
IC7 A-2 Q55 H-2
IC8 P-1 Q56 H-4
IC9 P-3 Q57 F-3
IC10 P-2 Q58 G-2
LV1 F-3 Q59 D-3
Q1 J-2 Q70 C-2
Q2 J-2 Q71 C-3
Q3 K-2 Q72 K-4
Q4 N-3 RV1 L-1
Q5 N-3 RV2 E-5
Q6 M-4 RV3 F-5
Q7 N-4 RV4 C-6
Q8 O-5 RV5 B-6
Q9 P-5 RV6 J-6
Q10 O-5 RV7 E-6
Q11 O-6 RV8 E-6
Q12 O-6 RV9 D-3
Q13 O-6 RV10 G-3
Q14 M-2 RV11 E-3
Q15 L-3 S1 D-6
Q16 L-3 S2 C-2
Q17 L-4 TP1 M-6
Q18 L-5 TP2 M-6
Q19 K-5 TP3 M-6
Q20 K-6 TP4 E-4
Q21 N-6 TP5 G-6
Q22 N-5 TP6 B-1
Q23 N-4
Q24 M-6
Q25 M-5
Q26 M-4



C-16 (a)

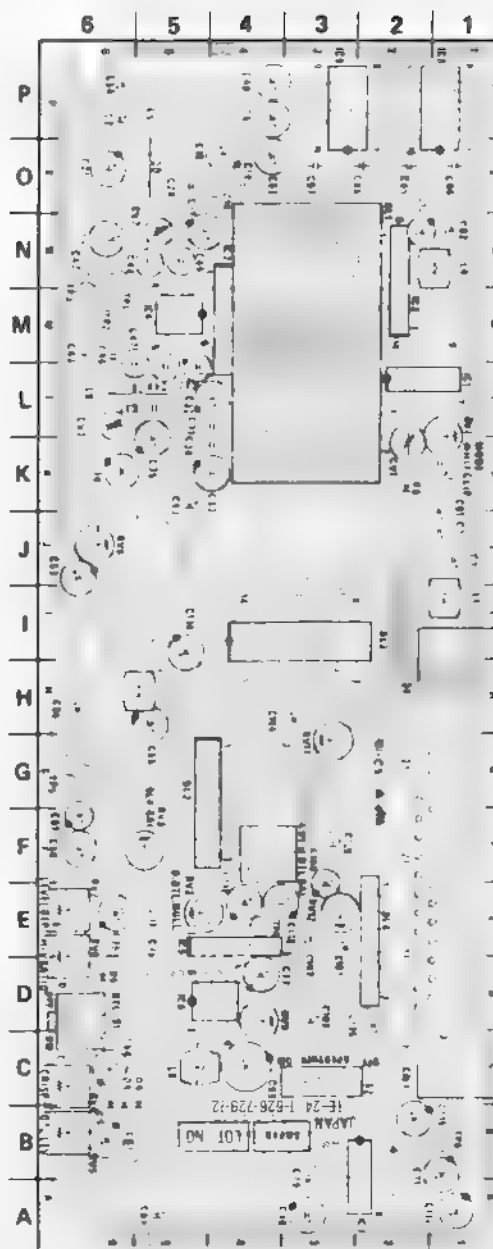
BVP-7 (J) 1-R6
BVP-7 (UC) 1-R6
BVP-7P (EK) 1-R5

Ser. No. 10291-10430 (UC)
30161-30250 (J)
40201-40380 (EK)

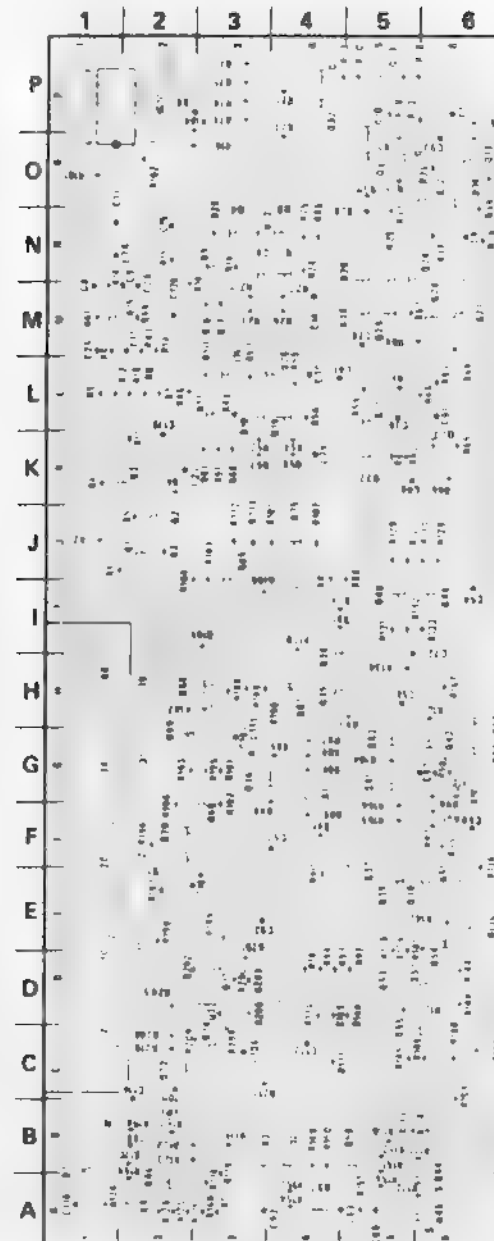
IE-24/24P IE-24/24P

IE-24/24P 1-626-729-12

CN1	C-2	Q31	P-4
		Q32	P-4
CV1	K-2	Q33	P-5
CV2	N-5	Q34	H-4
CV3	L-6	Q35	H-4
		Q36	G-3
D1	G-4	Q37	F-5
D2	B-4	Q38	E-5
D3	B-4	Q39	E-5
D4	C-6	Q41	G-5
D5	B-6	Q42	G-6
D6	D-6	Q43	G-5
D7	B-1	Q44	A-6
D8	K-2	Q45	A-6
D9	C-5	Q46	A-2
D10	F-2	Q47	A-2
		Q48	I-5
DL1	O-2	Q49	I-6
DL2	G-5	Q50	G-6
DL3	I-2	Q51	F-6
DL4	E-2	Q52	D-6
		Q53	D-5
IC1	L-1	Q54	E-6
IC2	M-2	Q55	C-5
IC3	N-4	Q56	B-5
IC4	M-5	Q57	A-4
IC5	E-5	Q63	H-6
IC6	D-5	Q65	J-3
IC7	A-2	Q66	H-2
IC8	P-1	Q67	H-4
IC9	P-3	Q68	F-3
IC10	P-2	Q69	G-2
		Q70	F-2
LV1	F-3	Q71	D-3
		Q72	D-3
Q1	J-2	Q73	C-2
Q2	J-2	Q74	C-3
Q3	K-2	Q75	K-4
Q4	N-3		
Q5	N-3	RV1	L-1
Q6	M-3	RV2	E-5
Q7	M-4	RV3	F-5
Q8	N-4	RV4	C-6
Q9	O-5	RV5	B-6
Q10	P-5	RV6	J-6
Q11	O-5	RV7	E-6
Q12	O-6	RV8	E-6
Q13	O-6	RV9	D-3
Q14	O-6	RV11	G-3
Q15	M-2	RV12	E-3
Q16	L-3		
Q17	L-3	S1	D-6
Q18	L-3	S2	C-2
Q19	L-4		
Q20	L-4	TP1	M-6
Q21	L-5	TP2	M-6
Q22	K-5	TP3	M-6
Q23	K-6	TP4	E-4
Q24	N-6	TP5	G-6
Q25	N-5	TP6	B-1
Q26	N-4		
Q27	M-6		
Q28	M-6		
Q29	M-5		
Q30	M-4		



C-15 (b)



IE-24/24P 1-526-729-12

CN1	C-2	Q31	P-4
		Q32	P-4
CV1	K-2	Q33	P-5
CV2	N-5	Q34	H-4
CV3	L-6	Q35	H-4
		Q36	G-3
D1	G-4	Q37	F-5
D2	B-4	Q38	E-5
D3	B-4	Q39	E-5
D4	C-6	Q41	G-5
D5	B-6	Q42	G-6
D6	D-6	Q43	G-5
D7	B-1	Q44	A-6
D8	K-2	Q45	A-6
D9	C-5	Q46	A-2
D10	F-2	Q47	A-2
		Q48	I-5
DL1	O-2	Q49	I-6
DL2	G-5	Q50	G-6
DL3	I-2	Q51	F-6
DL4	E-2	Q52	D-6
		Q53	D-5
IC1	L-1	Q54	E-6
IC2	M-2	Q55	C-5
IC3	N-4	Q56	B-5
IC4	M-5	Q57	A-4
IC5	E-5	Q63	H-6
IC6	D-5	Q65	J-3
IC7	A-2	Q66	H-2
IC8	P-1	Q67	H-4
IC9	P-3	Q68	F-3
IC10	P-2	Q69	G-2
		Q70	F-2
LV1	F-3	Q71	D-3
		Q72	D-3
Q1	J-2	Q73	C-2
Q2	J-2	Q74	C-3
Q3	K-2	Q75	K-4
Q4	N-3		
Q5	N-3	RV1	L-1
Q6	M-3	RV2	E-5
Q7	M-4	RV3	F-5
Q8	N-4	RV4	C-6
Q9	O-5	RV5	B-6
Q10	P-5	RV6	J-6
Q11	O-5	RV7	E-6
Q12	O-6	RV8	E-6
Q13	O-6	RV9	D-3
Q14	O-6	RV11	G-3
Q15	M-2	RV12	E-3
Q16	L-3		
Q17	L-3	S1	D-6
Q18	L-3	S2	C-2
Q19	L-4		
Q20	L-4	TP1	M-6
Q21	L-5	TP2	M-6
Q22	K-5	TP3	M-6
Q23	K-6	TP4	E-4
Q24	N-6	TP5	G-6
Q25	N-5	TP6	B-1
Q26	N-4		
Q27	M-6		
Q28	M-6		
Q29	M-5		
Q30	M-4		

C-15 (b)

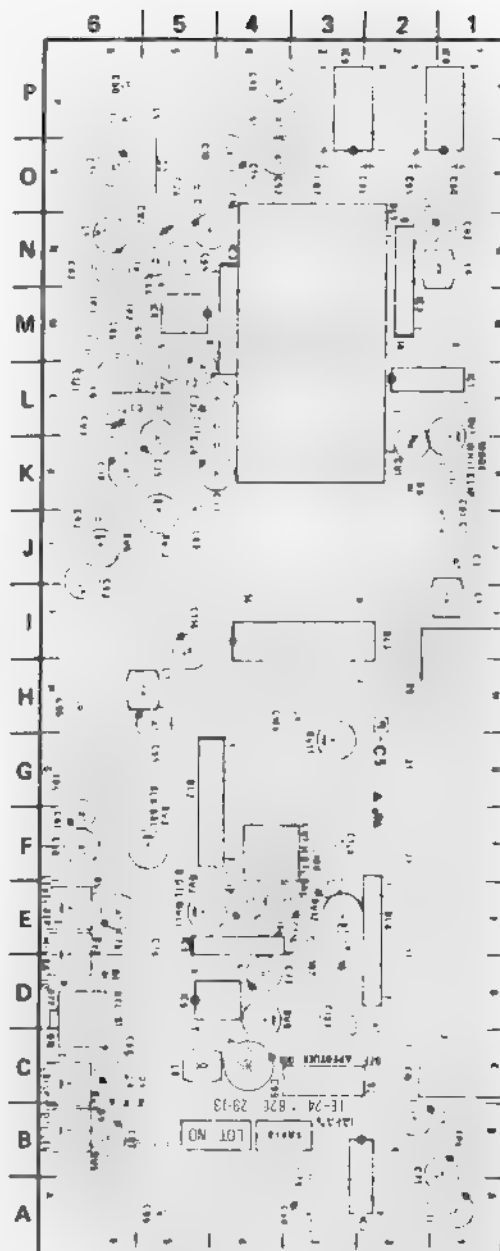
BVP-7 (J) 1-A6
BVP-7 (UC) 1-A6
BVP-7P (EK) 1-A5

Ser. No. 10431-11220 BVP-7 (UC)
30251-30650 BVP-7 (J)
40381-42025 BVP-7P (EK)

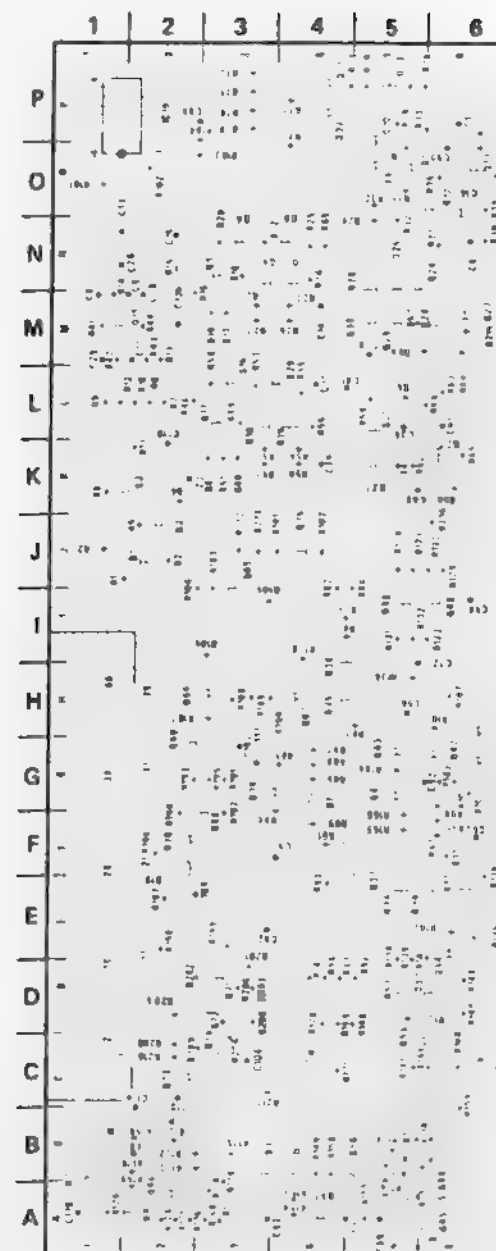
IE-24/24P IE-24/24P

IE-24/24P I-626-729-13

CN1	C-2	Q31	P-4
		Q32	P-4
CV1	K-2	Q33	P-5
CV2	N-5	Q34	H-4
CV3	L-6	Q35	H-4
		Q36	G-3
D1	G-4	Q37	F-5
D2	B-4	Q38	E-5
D3	B-4	Q39	E-5
D4	C-6	Q41	G-5
D5	B-6	Q42	G-6
D6	D-6	Q43	G-5
D7	B-1	Q44	A-6
D8	K-2	Q45	A-6
D9	C-5	Q46	A-2
D10	F-2	Q47	A-2
		Q48	I-5
DL1	O-2	Q49	I-6
DL2	G-5	Q50	G-6
DL3	I-2	Q51	F-6
DL4	E-2	Q52	D-6
		Q53	D-5
IC1	L-1	Q54	E-6
IC2	M-2	Q55	C-5
IC3	N-4	Q56	B-5
IC4	M-5	Q57	A-4
IC5	E-5	Q63	H-6
IC6	D-5	Q65	J-3
IC7	A-2	Q66	H-2
IC8	P-1	Q67	H-4
IC9	P-3	Q68	F-3
IC10	P-2	Q69	G-2
		Q70	F-2
LV1	F-3	Q71	D-3
		Q72	D-3
Q1	J-2	Q73	C-2
Q2	J-2	Q74	C-3
Q3	K-2	Q75	K-4
Q4	N-3		
Q5	N-3	RV1	L-1
Q6	M-3	RV2	E-5
Q7	M-4	RV3	F-5
Q8	N-4	RV4	C-6
Q9	O-5	RV5	B-6
Q10	P-5	RV6	J-6
Q11	O-5	RV7	E-6
Q12	O-6	RV8	E-6
Q13	O-6	RV9	D-3
Q14	O-6	RV11	G-3
Q15	M-2	RV12	E-3
Q16	L-3	RV13	J-5
Q17	L-3		
Q18	L-3	S1	D-6
Q19	L-4	S2	C-2
Q20	L-4		
Q21	L-5	TP1	M-6
Q22	K-5	TP2	M-6
Q23	K-6	TP3	M-6
Q24	N-6	TP4	E-4
Q25	N-5	TP5	G-6
Q26	N-4	TP6	B-1
Q27	M-6		
Q28	M-6		
Q29	M-5		
Q30	M-4		



C-15 (c)



C-16 (c)

IE-24/24P I-626-729-13

CN1	C-2	Q31	P-4
		Q32	P-4
CV1	K-2	Q33	P-5
CV2	N-5	Q34	H-4
CV3	L-6	Q35	H-4
		Q36	G-3
D1	G-4	Q37	F-5
D2	B-4	Q38	E-5
D3	B-4	Q39	E-5
D4	C-6	Q41	G-5
D5	B-6	Q42	G-6
D6	D-6	Q43	G-5
D7	B-1	Q44	A-6
D8	K-2	Q45	A-6
D9	C-5	Q46	A-2
D10	F-2	Q47	A-2
		Q48	I-5
DL1	O-2	Q49	I-6
DL2	G-5	Q50	G-6
DL3	I-2	Q51	F-6
DL4	E-2	Q52	D-6
		Q53	D-5
IC1	L-1	Q54	E-6
IC2	M-2	Q55	C-5
IC3	N-4	Q56	B-5
IC4	M-5	Q57	A-4
IC5	E-5	Q63	H-6
IC6	D-5	Q65	J-3
IC7	A-2	Q66	H-2
IC8	P-1	Q67	H-4
IC9	P-3	Q68	F-3
IC10	P-2	Q69	G-2
		Q70	F-2
LV1	F-3	Q71	D-3
		Q72	D-3
Q1	J-2	Q73	C-2
Q2	J-2	Q74	C-3
Q3	K-2	Q75	K-4
Q4	N-3		
Q5	N-3	RV1	L-1
Q6	M-3	RV2	E-5
Q7	M-4	RV3	F-5
Q8	N-4	RV4	C-6
Q9	O-5	RV5	B-6
Q10	P-5	RV6	J-6
Q11	O-5	RV7	E-6
Q12	O-6	RV8	E-6
Q13	O-6	RV9	D-3
Q14	O-6	RV11	G-3
Q15	M-2	RV12	E-3
Q16	L-3	RV13	J-5
Q17	L-3		
Q18	L-3	S1	D-6
Q19	L-4	S2	C-2
Q20	L-4		
Q21	L-5	TP1	M-6
Q22	K-5	TP2	M-6
Q23	K-6	TP3	M-6
Q24	N-6	TP4	E-4
Q25	N-5	TP5	G-6
Q26	N-4	TP6	B-1
Q27	M-6		
Q28	M-6		
Q29	M-5		
Q30	M-4		

BVP-7 (J) 1-R7
BVP-7 (UC) 1-R7
BVP-7P (EK) 1-R6

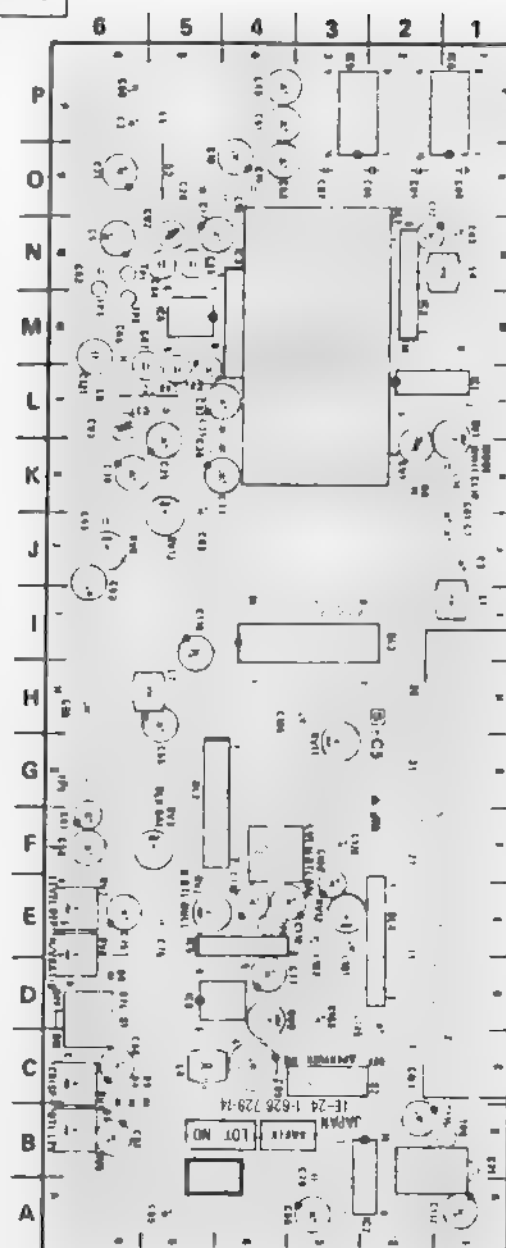
Ser. No. 11221- BVP-7 (UC)
 30651- BVP-7 (J)
 42026- BVP-7P (EK)
 10001- BVP-7000HS (UC)
 30026- BVP-7000HS (J)
 40001- BVP-7000HSP (EK)

IE-24/24H/24P/24HP

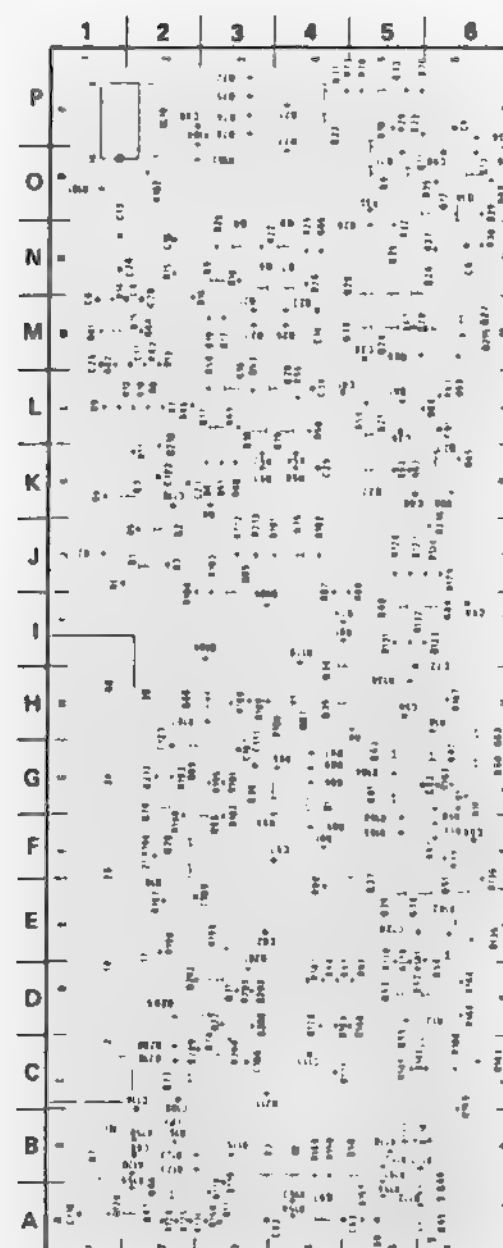
IE-24/24H/24P/24HP

IE-24/24P 1-626-729-14

CN1 C-2 Q31 P-4
 CV1 K-2 Q32 P-4
 CV2 N-5 Q33 P-5
 CV3 L-6 Q34 H-4
 D1 G-4 Q35 H-4
 D2 B-4 Q36 G-3
 D3 B-4 Q37 F-5
 D4 C-6 Q38 E-5
 D5 B-6 Q39 E-5
 D6 D-6 Q40 G-5
 D7 B-1 Q41 A-6
 D8 K-2 Q42 A-6
 D9 C-5 Q43 A-2
 D10 F-2 Q44 A-2
 DL1 O-2 Q45 I-5
 DL2 G-5 Q46 I-6
 DL3 I-2 Q47 G-6
 DL4 E-2 Q48 D-6
 IC1 L-1 Q49 E-6
 IC2 M-2 Q50 C-5
 IC3 N-4 Q51 B-5
 IC4 M-5 Q52 A-4
 IC5 E-5 Q53 H-6
 IC6 D-5 Q54 J-3
 IC7 A-2 Q55 H-2
 IC8 P-1 Q56 H-4
 IC9 P-3 Q57 F-3
 IC10 P-2 Q58 G-2
 LV1 F-3 Q59 D-3
 Q1 J-2 Q60 C-2
 Q2 J-2 Q61 C-3
 Q3 K-2 Q62 K-4
 Q4 N-3
 Q5 N-3 RV1 L-1
 Q6 M-3 RV2 E-5
 Q7 M-4 RV3 F-5
 Q8 N-4 RV4 C-6
 Q9 O-5 RV5 B-6
 Q10 P-5 RV6 J-6
 Q11 O-5 RV7 E-6
 Q12 O-6 RV8 E-6
 Q13 O-6 RV9 D-3
 Q14 O-6 RV10 G-3
 Q15 M-2 RV11 E-3
 Q16 L-3 RV12 J-5
 Q17 L-3
 Q18 L-3 S1 D-6
 Q19 L-4 S2 C-2
 Q20 L-4
 Q21 L-5 TP1 M-6
 Q22 K-5 TP2 M-6
 Q23 K-6 TP3 M-6
 Q24 N-6 TP4 E-4
 Q25 N-5 TP5 G-6
 Q26 N-4 TP6 B-1
 Q27 M-6
 Q28 M-6
 Q29 M-5
 Q30 M-4



C-15 (d)



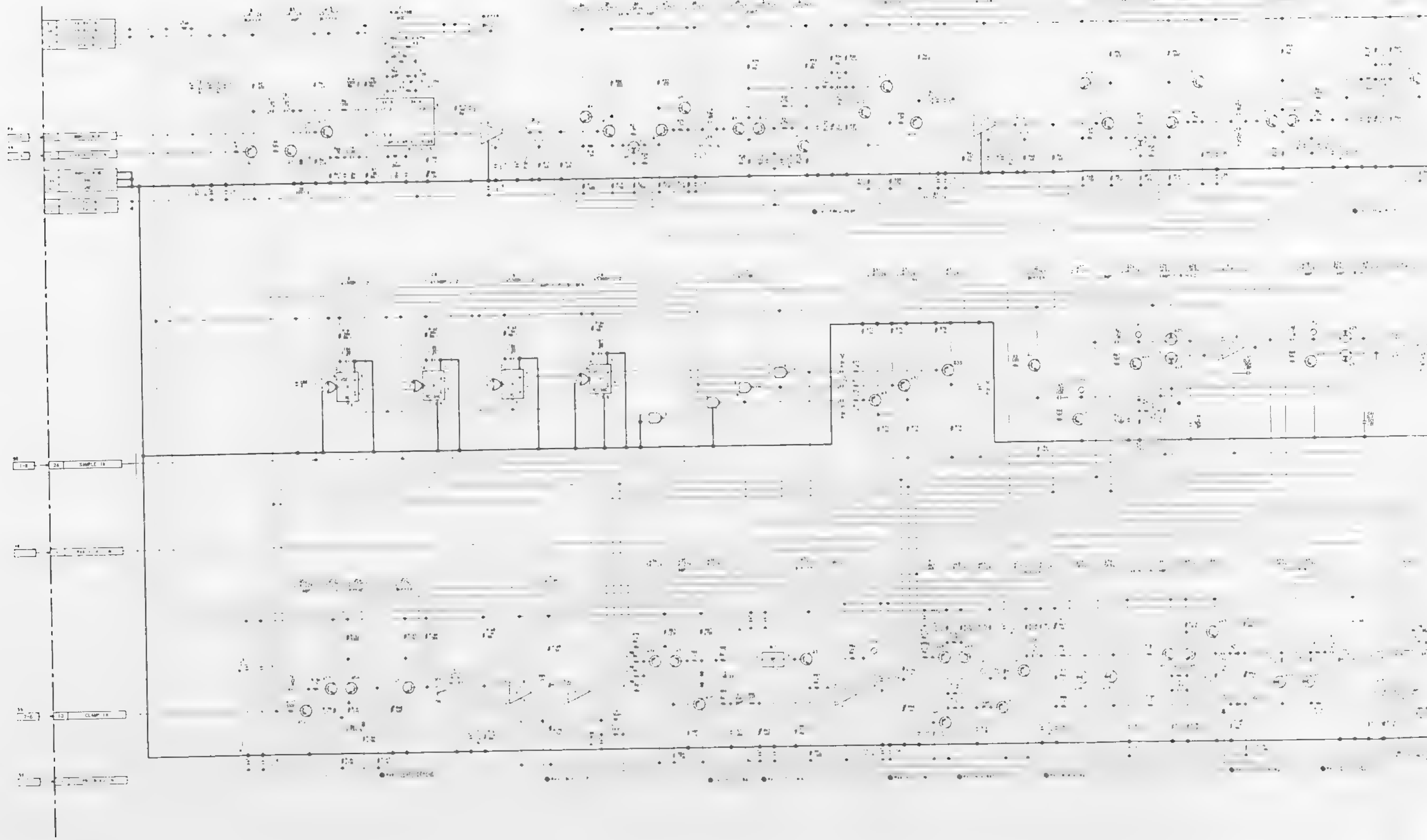
C-16 (d)

IE-24/24P 1-626-729-14

CN1 C-2 Q31 P-4
 CV1 K-2 Q32 P-4
 CV2 N-5 Q33 P-5
 CV3 L-6 Q34 H-4
 D1 G-4 Q35 H-4
 D2 B-4 Q36 G-3
 D3 B-4 Q37 F-5
 D4 C-6 Q38 E-5
 D5 B-6 Q39 E-5
 D6 D-6 Q40 G-5
 D7 B-1 Q41 A-6
 D8 K-2 Q42 A-6
 D9 C-5 Q43 A-2
 D10 F-2 Q44 A-2
 DL1 O-2 Q45 I-5
 DL2 G-5 Q46 I-6
 DL3 I-2 Q47 G-6
 DL4 E-2 Q48 D-6
 IC1 L-1 Q49 E-6
 IC2 M-2 Q50 C-5
 IC3 N-4 Q51 B-5
 IC4 M-5 Q52 A-4
 IC5 E-5 Q53 H-6
 IC6 D-5 Q54 J-3
 IC7 A-2 Q55 H-2
 IC8 P-1 Q56 H-4
 IC9 P-3 Q57 F-3
 IC10 P-2 Q58 G-2
 LV1 F-3 Q59 D-3
 Q1 J-2 Q60 C-2
 Q2 J-2 Q61 C-3
 Q3 K-2 Q62 K-4
 Q4 N-3
 Q5 N-3 RV1 L-1
 Q6 M-3 RV2 E-5
 Q7 M-4 RV3 F-5
 Q8 N-4 RV4 C-6
 Q9 O-5 RV5 B-6
 Q10 P-5 RV6 J-6
 Q11 O-5 RV7 E-6
 Q12 O-6 RV8 E-6
 Q13 O-6 RV9 D-3
 Q14 O-6 RV10 G-3
 Q15 M-2 RV11 E-3
 Q16 L-3 RV12 J-5
 Q17 L-3
 Q18 L-3 S1 D-6
 Q19 L-4 S2 C-2
 Q20 L-4
 Q21 L-5 TP1 M-6
 Q22 K-5 TP2 M-6
 Q23 K-6 TP3 M-6
 Q24 N-6 TP4 E-4
 Q25 N-5 TP5 G-6
 Q26 N-4 TP6 B-1
 Q27 M-6
 Q28 M-6
 Q29 M-5
 Q30 M-4

BVP-7 (J) 1-R7
 BVP-7 (UC) 1-R7
 BVP-7P (EK) 1-R6
 BVP-7000HS (J) 1-R2
 BVP-7000HS (UC) 1ST
 BVP-7000HSP (EK) 1ST

IE-24/24P BOARD IMAGE ENHANCER



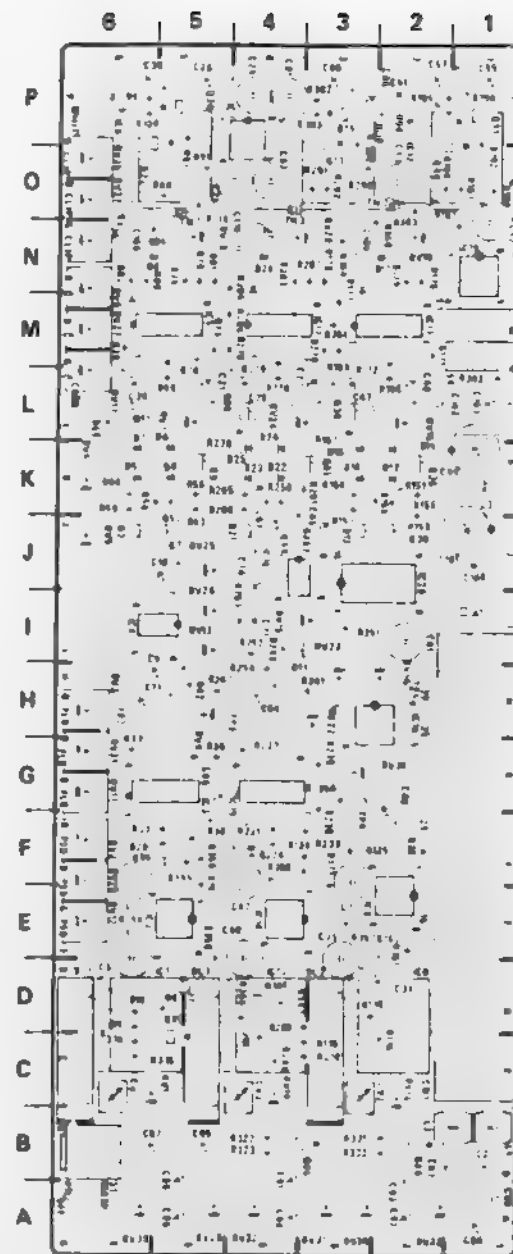
C-17

C-18

Ser.No. 10001-10060 (UC)
30001-30040 (J)

PR-121/121P Y-623-338-II

CN1	E-1	Q11	L-6	Q86	A-3
		Q12	L-6	Q87	A-2
CV1	C-6	Q13	L-5	Q88	A-2
CV2	C-3	Q14	M-6	Q89	B-2
CV3	C-4	Q15	M-5	Q90	E-1
		Q16	M-5	Q91	K-1
D1	F-5	Q17	N-5	Q92	J-1
D2	K-6	Q18	N-5	Q93	L-1
D3	J-6	Q19	N-6	Q94	F-1
D4	K-5	Q20	O-5	Q95	L-4
D5	K-6	Q21	O-6	Q96	F-5
D6	K-5	Q22	P-6	Q97	F-4
D7	K-6	Q23	P-6	Q98	B-6
D8	N-6	Q24	P-5	Q99	C-3
D9	F-3	Q25	P-5	Q100	C-4
D10	H-2	Q26	C-1	Q101	C-4
D11	I-3	Q27	C-2	Q102	O-6
D12	J-3	Q28	C-2	Q103	E-2
D13	K-2	Q29	E-2	Q104	D-4
D14	K-3	Q30	F-2	Q105	F-2
D15	K-2	Q31	G-2		
D16	K-3	Q32	G-3	RV1	C-6
D17	N-2	Q33	J-3	RV2	F-6
D18	F-4	Q34	J-2	RV3	H-6
D19	I-4	Q35	K-2	RV4	H-5
D20	I-4	Q36	K-2	RV5	J-6
D21	J-4	Q37	L-1	RV6	K-6
D22	K-4	Q38	L-3	RV7	L-5
D23	K-4	Q39	L-3	RV8	N-6
D24	K-4	Q40	M-3	RV9	N-5
D25	K-4	Q41	L-2	RV10	C-2
D26	N-4	Q42	M-2	RV11	G-6
D27	O-1	Q43	M-2	RV12	E-6
D28	E-1	Q44	N-2	RV13	I-5
D29	F-1	Q45	N-2	RV14	H-2
D30	K-6	Q46	N-2	RV15	I-3
D32	F-5	Q47	O-1	RV16	L-2
D33	F-4	Q48	O-2	RV17	L-6
D34	K-6	Q49	O-2	RV18	N-2
		Q50	P-2	RV19	C-4
DL1	C-6	Q51	P-1	RV20	F-6
DL2	C-3	Q52	P-1	RV21	G-6
DL3	C-5	Q53	C-4	RV22	H-3
		Q54	E-4	RV23	H-3
IC1	D-6	Q55	G-4	RV24	I-5
IC2	E-5	Q56	H-4	RV25	J-5
IC3	G-5	Q57	I-4	RV26	L-4
IC4	I-5	Q58	J-4	RV27	M-6
IC5	M-5	Q59	J-4	RV28	N-3
IC6	O-5	Q60	K-4	RV29	A-5
IC7	P-4	Q61	K-3	RV30	A-6
IC8	O-2	Q62	L-4	RV31	A-3
IC9	E-2	Q63	L-4	RV32	A-4
IC10	H-2	Q64	M-4	RV33	A-2
IC11	M-2	Q65	L-4	RV34	A-3
IC12	O-1	Q66	M-4	RV35	O-6
IC13	D-4	Q67	M-4	RV36	N-6
IC14	E-4	Q68	N-4	RV37	O-6
IC15	G-4	Q69	N-4	RV38	G-3
IC16	J-4	Q70	N-4		
IC17	M-4	Q71	O-3	S1	B-6
IC18	O-3	Q72	O-3	S3	M-1
IC19	N-1	Q73	P-3	S4	M-1
IC20	J-2	Q74	P-3		
		Q75	P-3	TH1	O-5
Q1	C-5	Q76	P-3	TH2	O-2
Q2	C-6	Q78	A-6	TH3	O-4
Q3	E-5	Q79	A-5		
Q4	G-5	Q80	A-5	TP2	H-6
Q5	H-5	Q81	C-5	TP4	G-3
Q6	J-6	Q82	A-4	TP5	H-2
Q7	J-5	Q83	A-4	TP8	H-4
Q8	K-5	Q84	A-3		
Q9	K-5	Q85	B-3		
Q10	L-5				



C-21 (a)



C-22 (a)

PR-121/121P Y-623-338-II

CN1	E-1	Q11	L-6	Q86	A-3
		Q12	L-6	Q87	A-2
CV1	C-6	Q13	L-5	Q88	A-2
CV2	C-3	Q14	M-6	Q89	B-2
CV3	C-4	Q15	M-5	Q90	E-1
		Q16	M-5	Q91	K-1
D1	F-5	Q17	N-5	Q92	J-1
D2	K-6	Q18	N-5	Q93	L-1
D3	J-6	Q19	N-6	Q94	F-1
D4	K-5	Q20	O-5	Q95	L-4
D5	K-6	Q21	O-6	Q96	F-5
D6	K-5	Q22	P-6	Q97	F-4
D7	K-6	Q23	P-6	Q98	B-6
D8	N-6	Q24	P-5	Q99	C-3
D9	F-3	Q25	P-5	Q100	C-4
D10	H-2	Q26	C-1	Q101	C-4
D11	I-3	Q27	C-2	Q102	O-6
D12	J-3	Q28	C-2	Q103	E-2
D13	K-2	Q29	E-2	Q104	D-4
D14	K-3	Q30	F-2	Q105	F-2
D15	K-2	Q31	G-2		
D16	K-3	Q32	G-3	RV1	C-6
D17	N-2	Q33	J-3	RV2	F-6
D18	F-4	Q34	J-2	RV3	H-6
D19	I-4	Q35	K-2	RV4	H-5
D20	I-4	Q36	K-2	RV5	J-6
D21	J-4	Q37	L-1	RV6	K-6
D22	K-4	Q38	L-3	RV7	L-5
D23	K-4	Q39	L-3	RV8	N-6
D24	K-4	Q40	M-3	RV9	N-5
D25	K-4	Q41	L-2	RV10	C-2
D26	N-4	Q42	M-2	RV11	G-6
D27	O-1	Q43	M-2	RV12	E-6
D28	E-1	Q44	N-2	RV13	I-5
D29	F-1	Q45	N-2	RV14	H-2
D30	K-6	Q46	N-2	RV15	I-3
D32	F-5	Q47	O-1	RV16	L-2
D33	F-4	Q48	O-2	RV17	L-6
D34	K-6	Q49	O-2	RV18	N-2
		Q50	P-2	RV19	C-4
DL1	C-6	Q51	P-1	RV20	F-6
DL2	C-3	Q52	P-1	RV21	G-6
DL3	C-5	Q53	C-4	RV22	H-3
		Q54	E-4	RV23	H-3
IC1	D-6	Q55	G-4	RV24	I-5
IC2	E-5	Q56	H-4	RV25	J-5
IC3	G-5	Q57	I-4	RV26	L-4
IC4	I-5	Q58	J-4	RV27	M-6
IC5	M-5	Q59	J-4	RV28	N-3
IC6	O-5	Q60	K-4	RV29	A-5
IC7	P-4	Q61	K-3	RV30	A-6
IC8	O-2	Q62	L-4	RV31	A-3
IC9	E-2	Q63	L-4	RV32	A-4
IC10	H-2	Q64	M-4	RV33	A-2
IC11	M-2	Q65	L-4	RV34	A-3
IC12	O-1	Q66	M-4	RV35	O-6
IC13	D-4	Q67	M-4	RV36	N-6
IC14	E-4	Q68	N-4	RV37	O-6
IC15	G-4	Q69	N-4	RV38	G-3
IC16	J-4	Q70	N-4		
IC17	M-4	Q71	O-3	S1	B-6
IC18	O-3	Q72	O-3	S3	M-1
IC19	N-1	Q73	P-3	S4	M-1
IC20	J-2	Q74	P-3		
		Q75	P-3	TH1	O-5
Q1	C-5	Q76	P-3	TH2	O-2
Q2	C-6	Q78	A-6	TH3	O-4
Q3	E-5	Q79	A-5		
Q4	G-5	Q80	A-5	TP2	H-6
Q5	H-5	Q81	C-5	TP4	G-3
Q6	J-6	Q82	A-4	TP5	H-2
Q7	J-5	Q83	A-4	TP8	H-4
Q8	K-5	Q84	A-3		
Q9	K-5	Q85	B-3		
Q10	L-5				

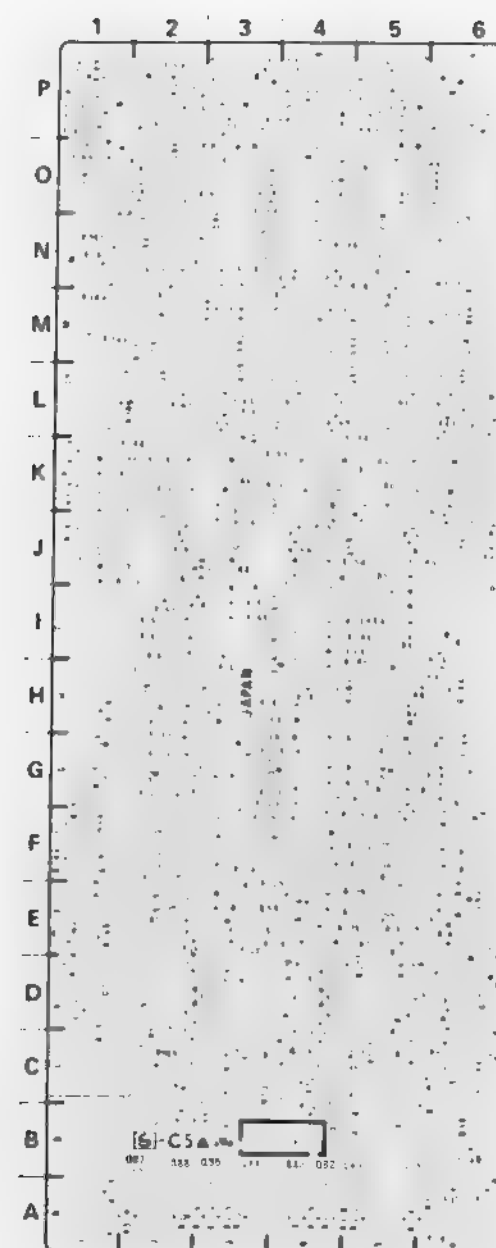
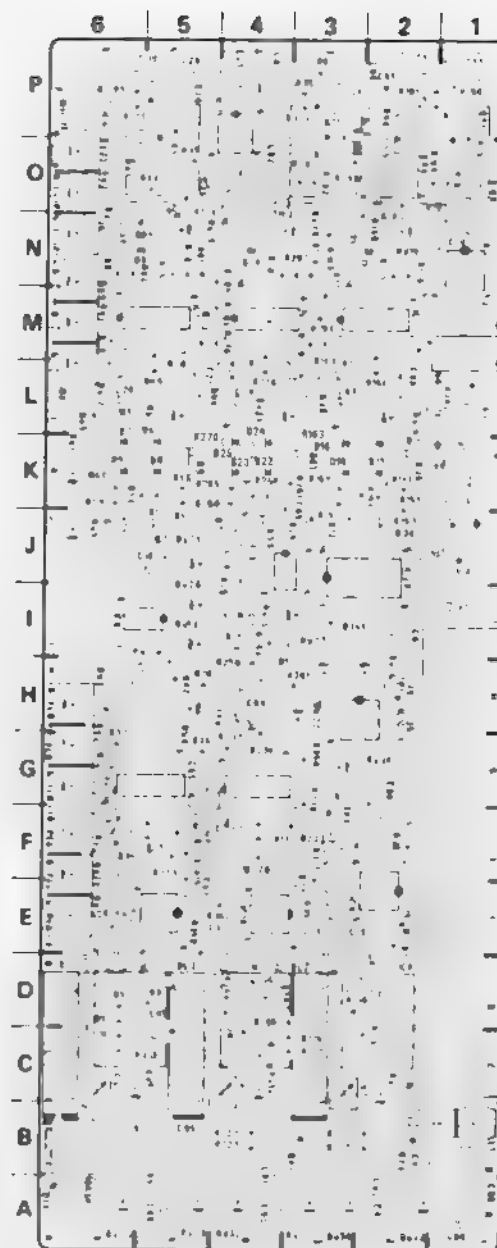
BVP-7 (J) 1-A6
BVP-7 (UC) 1-A6
BVP-7P (EK) 1-A6

Ser. No. 10061-10290 (UC)
30041-30160 (J)
40001-40200 (EK)

PR-121/121P 1-1

CN1	E-1	Q11	L-6	Q86	A-3
		Q12	L-6	Q87	A-2
CV1	C-6	Q13	L-5	Q88	A-2
CV2	C-3	Q14	M-6	Q89	B-2
CV3	C-4	Q15	M-5	Q90	E-1
		Q16	M-5	Q91	K-1
D1	F-5	Q17	N-5	Q92	J-1
D2	K-6	Q18	N-5	Q93	L-1
D3	J-6	Q19	N-6	Q94	F-1
D4	K-5	Q20	O-5	Q95	L-4
D5	K-6	Q21	O-6	Q96	F-5
D6	K-5	Q22	P-6	Q97	F-4
D7	K-6	Q23	P-6	Q98	B-6
D8	N-6	Q24	P-5	Q99	C-3
D9	F-3	Q25	P-5	Q100	C-4
D10	H-2	Q26	C-1	Q101	C-4
D11	I-3	Q27	C-2	Q102	D-6
D12	J-3	Q28	C-2	Q103	E-2
D13	K-2	Q29	E-2	Q104	D-4
D14	K-3	Q30	F-2	Q105	F-2
D15	K-2	Q31	G-2		
D16	K-3	Q32	G-3	RV1	C-6
D17	N-2	Q33	J-3	RV2	F-6
D18	F-4	Q34	J-2	RV3	H-6
D19	I-4	Q35	K-2	RV4	H-5
D20	I-4	Q36	K-2	RV5	J-6
D21	J-4	Q37	L-1	RV6	K-6
D22	K-4	Q38	L-3	RV7	L-5
D23	K-4	Q39	L-3	RV8	N-6
D24	K-4	Q40	M-3	RV9	N-5
D25	K-4	Q41	L-2	RV10	C-2
D26	N-4	Q42	M-2	RV11	G-6
D27	D-1	Q43	M-2	RV12	E-6
D28	E-1	Q44	N-2	RV13	I-5
D29	F-1	Q45	N-2	RV14	H-2
D30	K-6	Q46	N-2	RV15	I-3
D32	F-5	Q47	O-1	RV16	L-2
D33	F-4	Q48	O-2	RV17	L-6
D34	K-6	Q49	O-2	RV18	N-2
		Q50	P-2	RV19	C-4
DL1	C-6	Q51	P-1	RV20	F-6
DL2	C-3	Q52	P-1	RV21	G-6
DL3	C-5	Q53	C-4	RV22	H-3
		Q54	E-4	RV23	H-3
IC1	D-6	Q55	G-4	RV24	I-5
IC2	E-5	Q56	H-4	RV25	J-5
IC3	G-5	Q57	I-4	RV26	L-4
IC4	I-5	Q58	J-4	RV27	M-6
IC5	M-5	Q59	J-4	RV28	N-3
IC6	O-5	Q60	K-4	RV29	A-5
IC7	P-4	Q61	K-3	RV30	A-6
IC8	D-2	Q62	L-4	RV31	A-3
IC9	E-2	Q63	L-4	RV32	A-4
IC10	H-2	Q64	M-4	RV33	A-2
IC11	M-2	Q65	L-4	RV34	A-3
IC12	O-1	Q66	M-4	RV35	O-6
IC13	D-4	Q67	M-4	RV36	N-6
IC14	E-4	Q68	N-4	RV37	O-6
IC15	G-4	Q69	N-4	RV38	G-3
IC16	J-4	Q70	N-4		
IC17	M-4	Q71	O-3	S1	B-6
IC18	O-3	Q72	O-3	S3	M-1
IC19	N-1	Q73	P-3	S4	M-1
IC20	J-2	Q74	P-3		
		Q75	P-3	TH1	O-5
Q1	C-5	Q76	P-3	TH2	O-2
Q2	C-6	Q78	A-6	TH3	O-4
Q3	E-5	Q79	A-5		
Q4	G-5	Q80	A-5	TP2	H-6
Q5	H-5	Q81	C-5	TP4	G-3
Q6	J-6	Q82	A-4	TP5	H-2
Q7	J-5	Q83	A-4	TP8	H-4
Q8	K-5	Q84	A-3		
Q9	K-5	Q85	B-3		
Q10	L-5				

C-21 (b)



PR-121/121P

PR-121/121P

CN1	F-1	Q11	L-6	Q86	A-3
		Q12	L-6	Q87	A-2
CV1	C-6	Q13	L-5	Q88	A-2
CV2	C-3	Q14	M-6	Q89	B-2
CV3	C-4	Q15	M-5	Q90	E-1
		Q16	M-5	Q91	K-1
D1	F-5	Q17	N-5	Q92	J-1
D2	K-6	Q18	N-5	Q93	L-1
D3	J-6	Q19	N-6	Q94	F-1
D4	K-5	Q20	O-5	Q95	L-4
D5	K-6	Q21	O-6	Q96	F-5
D6	K-5	Q22	P-6	Q97	F-4
D7	K-6	Q23	P-6	Q98	B-6
D8	N-6	Q24	P-5	Q99	C-3
D9	F-3	Q25	P-5	Q100	C-4
D10	H-2	Q26	C-1	Q101	C-4
D11	I-3	Q27	C-2	Q102	D-6
D12	J-3	Q28	C-2	Q103	E-2
D13	K-2	Q29	E-2	Q104	D-4
D14	K-3	Q30	F-2	Q105	F-2
D15	K-2	Q31	G-2		
D16	K-3	Q32	G-3	RV1	C-6
D17	N-2	Q33	J-3	RV2	F-6
D18	F-4	Q34	J-2	RV3	H-6
D19	I-4	Q35	K-2	RV4	H-5
D20	I-4	Q36	K-2	RV5	J-6
D21	J-4	Q37	L-1	RV6	K-6
D22	K-4	Q38	L-3	RV7	L-5
D23	K-4	Q39	L-3	RV8	N-6
D24	K-4	Q40	M-3	RV9	N-5
D25	K-4	Q41	L-2	RV10	C-2
D26	N-4	Q42	M-2	RV11	G-6
D27	D-1	Q43	M-2	RV12	E-6
D28	E-1	Q44	N-2	RV13	I-5
D29	F-1	Q45	N-2	RV14	H-2
D30	K-6	Q46	N-2	RV15	I-3
D32	F-5	Q47	O-1	RV16	L-2
D33	F-4	Q48	O-2	RV17	L-6
D34	K-6	Q49	O-2	RV18	N-2
		Q50	P-2	RV19	C-4
DL1	C-6	Q51	P-1	RV20	F-6
DL2	C-3	Q52	P-1	RV21	G-6
DL3	C-5	Q53	C-4	RV22	H-3
		Q54	E-4	RV23	H-3
IC1	D-6	Q55	G-4	RV24	I-5
IC2	E-5	Q56	H-4	RV25	J-5
IC3	G-5	Q57	I-4	RV26	L-4
IC4	I-5	Q58	J-4	RV27	M-6
IC5	M-5	Q59	J-4	RV28	N-3
IC6	O-5	Q60	K-4	RV29	A-5
IC7	P-4	Q61	K-3	RV30	A-6
IC8	D-2	Q62	L-4	RV31	A-3
IC9	E-2	Q63	L-4	RV32	A-4
IC10	H-2	Q64	M-4	RV33	A-2
IC11	M-2	Q65	L-4	RV34	A-3
IC12	O-1	Q66	M-4	RV35	O-6
IC13	D-4	Q67	M-4	RV36	N-6
IC14	E-4	Q68	N-4	RV37	O-6
IC15	G-4	Q69	N-4	RV38	G-3
IC16	J-4	Q70	N-4		
IC17	M-4	Q71	O-3	S1	B-6
IC18	O-3	Q72	O-3	S3	M-1
IC19	N-1	Q73	P-3	S4	M-1
IC20	J-2	Q74	P-3		
		Q75	P-3	TH1	O-5
Q1	C-5	Q76	P-3	TH2	O-2
Q2	C-6	Q78	A-6	TH3	O-4
Q3	E-5	Q79	A-5		
Q4	G-5	Q80	A-5	TP2	H-6
Q5	H-5	Q81	C-5	TP4	G-3
Q6	J-6	Q82	A-4	TP5	H-2
Q7	J-5	Q83	A-4	TP8	H-4
Q8	K-5	Q84	A-3		
Q9	K-5	Q85	B-3		
Q10	L-5				

C-22 (b)

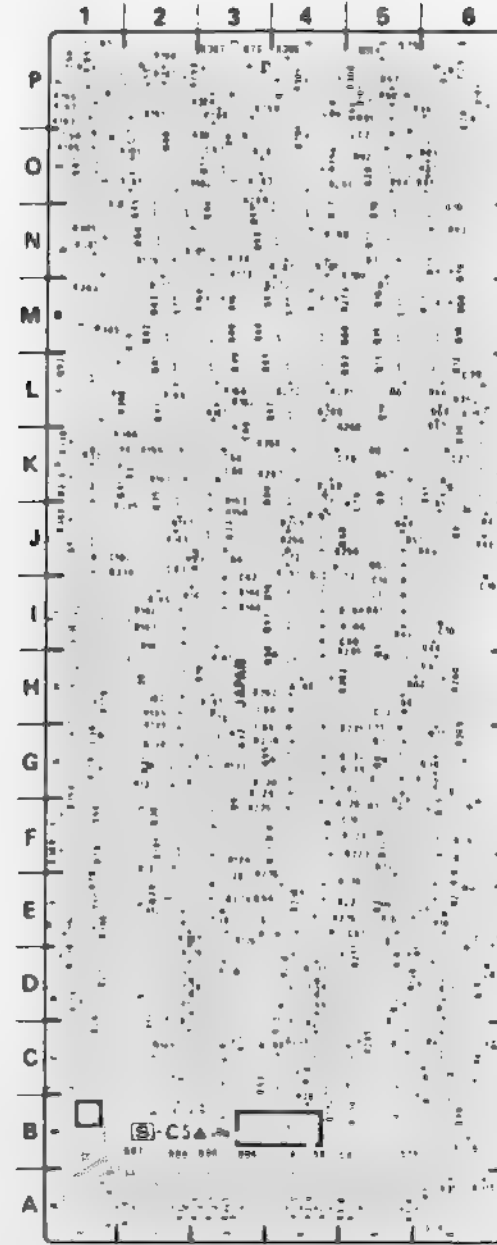
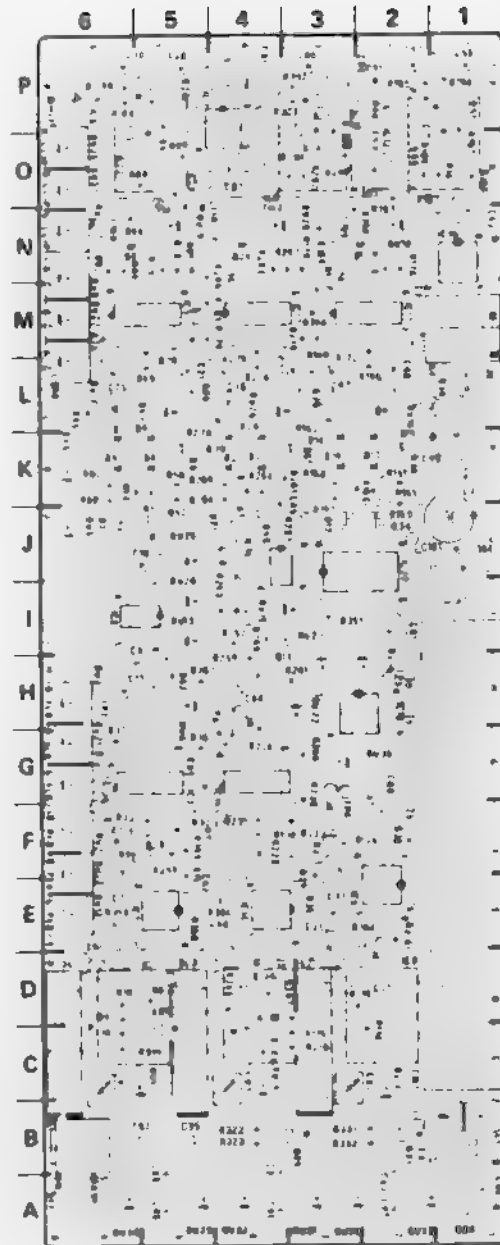
BVP-7 (J) 1-R6
BVP-7 (UC) 1-R6
BVP-7P (EK) 1-R5

Ser.No.10291-11220 BVP-7 (UC)
30161-30650 BVP-7 (J)
40201-42025 BVP-7P (EK)

PR-121/121P 1-627-709-12

CN1	E-1	Q11	L-6	Q86	A-3
		Q12	L-6	Q87	A-2
CV1	C-6	Q13	L-5	Q88	A-2
CV2	C-3	Q14	M-6	Q89	B-2
CV3	C-4	Q15	M-5	Q90	E-1
		Q16	M-5	Q91	K-1
D1	F-5	Q17	N-5	Q92	J-1
D2	K-6	Q18	N-5	Q93	L-1
D3	J-6	Q19	N-6	Q94	F-1
D4	K-5	Q20	O-5	Q95	L-4
D5	K-6	Q21	O-6	Q96	F-5
D6	K-5	Q22	P-6	Q97	F-4
D7	K-6	Q23	P-6	Q98	B-6
D8	N-6	Q24	P-5	Q99	C-3
D9	F-3	Q25	P-5	Q100	C-4
D10	H-2	Q26	C-1	Q101	C-4
D11	I-3	Q27	C-2	Q102	D-6
D12	J-3	Q28	C-2	Q103	E-2
D13	K-2	Q29	E-2	Q104	D-4
D14	K-3	Q30	F-2	Q105	F-2
D15	K-2	Q31	G-2		
D16	K-3	Q32	G-3	RV1	C-6
D17	N-2	Q33	J-3	RV2	F-6
D18	F-4	Q34	J-2	RV3	H-6
D19	I-4	Q35	K-2	RV4	H-5
D20	I-4	Q36	K-2	RV5	J-6
D21	J-4	Q37	L-1	RV6	K-6
D22	K-4	Q38	L-3	RV7	L-5
D23	K-4	Q39	L-3	RV8	N-6
D24	K-4	Q40	M-3	RV9	N-5
D25	K-4	Q41	L-2	RV10	C-2
D26	N-4	Q42	M-2	RV11	G-6
D27	D-1	Q43	M-2	RV12	E-6
D28	E-1	Q44	N-2	RV13	I-5
D29	F-1	Q45	N-2	RV14	H-2
D30	K-6	Q46	N-2	RV15	I-3
D32	F-5	Q47	O-1	RV16	L-2
D33	F-4	Q48	O-2	RV17	L-6
D34	K-6	Q49	O-2	RV18	N-2
		Q50	P-2	RV19	C-4
DL1	C-6	Q51	P-1	RV20	F-6
DL2	C-3	Q52	P-1	RV21	G-6
DL3	C-5	Q53	C-4	RV22	H-3
		Q54	E-4	RV23	H-3
IC1	D-6	Q55	G-4	RV24	I-5
IC2	E-5	Q56	H-4	RV25	J-5
IC3	G-5	Q57	I-4	RV26	L-4
IC4	I-5	Q58	J-4	RV27	M-6
IC5	M-5	Q59	J-4	RV28	N-3
IC6	O-5	Q60	K-4	RV29	A-5
IC7	P-4	Q61	K-3	RV30	A-6
IC8	D-2	Q62	L-4	RV31	A-3
IC9	E-2	Q63	L-4	RV32	A-4
IC10	H-2	Q64	M-4	RV33	A-2
IC11	M-2	Q65	L-4	RV34	A-3
IC12	O-1	Q66	M-4	RV35	O-6
IC13	D-4	Q67	M-4	RV36	N-6
IC14	E-4	Q68	N-4	RV37	O-6
IC15	G-4	Q69	N-4	RV38	G-3
IC16	J-4	Q70	N-4		
IC17	M-4	Q71	O-3	S1	B-6
IC18	O-3	Q72	O-3	S3	M-1
IC19	N-1	Q73	P-3	S4	M-1
IC20	J-2	Q74	P-3		
		Q75	P-3	TH1	O-5
Q1	C-5	Q76	P-3	TH2	O-2
Q2	C-6	Q78	A-6	TH3	O-4
Q3	E-5	Q79	A-5		
Q4	G-5	Q80	A-5	TP2	H-6
Q5	H-5	Q81	C-5	TP4	G-3
Q6	J-6	Q82	A-4	TP5	H-2
Q7	J-5	Q83	A-4	TP8	H-4
Q8	K-5	Q84	A-3		
Q9	K-5	Q85	B-3		
Q10	L-5				

C-21 (c)



C-22 (c)

PR-121/121P 1-627-709-12

CN1	E-1	Q11	L-6	Q86	A-3
		Q12	L-6	Q87	A-2
CV1	C-6	Q13	L-5	Q88	A-2
CV2	C-3	Q14	M-6	Q89	B-2
CV3	C-4	Q15	M-5	Q90	E-1
		Q16	M-5	Q91	K-1
D1	F-5	Q17	N-5	Q92	J-1
D2	K-6	Q18	N-5	Q93	L-1
D3	J-6	Q19	N-6	Q94	F-1
D4	K-5	Q20	O-5	Q95	L-4
D5	K-6	Q21	O-6	Q96	F-5
D6	K-5	Q22	P-6	Q97	F-4
D7	K-6	Q23	P-6	Q98	B-6
D8	N-6	Q24	P-5	Q99	C-3
D9	F-3	Q25	P-5	Q100	C-4
D10	H-2	Q26	C-1	Q101	C-4
D11	I-3	Q27	C-2	Q102	D-6
D12	J-3	Q28	C-2	Q103	E-2
D13	K-2	Q29	E-2	Q104	D-4
D14	K-3	Q30	F-2	Q105	F-2
D15	K-2	Q31	G-2		
D16	K-3	Q32	G-3	RV1	C-6
D17	N-2	Q33	J-3	RV2	F-6
D18	F-4	Q34	J-2	RV3	H-6
D19	I-4	Q35	K-2	RV4	H-5
D20	I-4	Q36	K-2	RV5	J-6
D21	J-4	Q37	L-1	RV6	K-6
D22	K-4	Q38	L-3	RV7	L-5
D23	K-4	Q39	L-3	RV8	N-6
D24	K-4	Q40	M-3	RV9	N-5
D25	K-4	Q41	L-2	RV10	C-2
D26	N-4	Q42	M-2	RV11	G-6
D27	D-1	Q43	M-2	RV12	E-6
D28	E-1	Q44	N-2	RV13	I-5
D29	F-1	Q45	N-2	RV14	H-2
D30	K-6	Q46	N-2	RV15	I-3
D32	F-5	Q47	O-1	RV16	L-2
D33	F-4	Q48	O-2	RV17	L-6
D34	K-6	Q49	O-2	RV18	N-2
		Q50	P-2	RV19	C-4
DL1	C-6	Q51	P-1	RV20	F-6
DL2	C-3	Q52	P-1	RV21	G-6
DL3	C-5	Q53	C-4	RV22	H-3
		Q54	E-4	RV23	H-3
IC1	D-6	Q55	G-4	RV24	I-5
IC2	E-5	Q56	H-4	RV25	J-5
IC3	G-5	Q57	I-4	RV26	L-4
IC4	I-5	Q58	J-4	RV27	M-6
IC5	M-5	Q59	J-4	RV28	N-3
IC6	O-5	Q60	K-4	RV29	A-5
IC7	P-4	Q61	K-3	RV30	A-6
IC8	D-2	Q62	L-4	RV31	A-3
IC9	E-2	Q63	L-4	RV32	A-4
IC10	H-2	Q64	M-4	RV33	A-2
IC11	M-2	Q65	L-4	RV34	A-3
IC12	O-1	Q66	M-4	RV35	O-6
IC13	D-4	Q67	M-4	RV36	N-6
IC14	E-4	Q68	N-4	RV37	O-6
IC15	G-4	Q69	N-4	RV38	G-3
IC16	J-4	Q70	N-4		
IC17	M-4	Q71	O-3	S1	B-6
IC18	O-3	Q72	O-3	S3	M-1
IC19	N-1	Q73	P-3	S4	M-1
IC20	J-2	Q74	P-3		
		Q75	P-3	TH1	O-5
Q1	C-5	Q76	P-3	TH2	O-2
Q2	C-6	Q78	A-6	TH3	O-4
Q3	E-5	Q79	A-5		
Q4	G-5	Q80	A-5	TP2	H-6
Q5	H-5	Q81	C-5	TP4	G-3
Q6	J-6	Q82	A-4	TP5	H-2
Q7	J-5	Q83	A-4	TP8	H-4
Q8	K-5	Q84	A-3		
Q9	K-5	Q85	B-3		
Q10	L-5				

BVP-7 (J) 1-A7
BVP-7 (UC) 1-A7
BVP-7P (EK) 1-A6

Ser.No. 11221-
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40001-

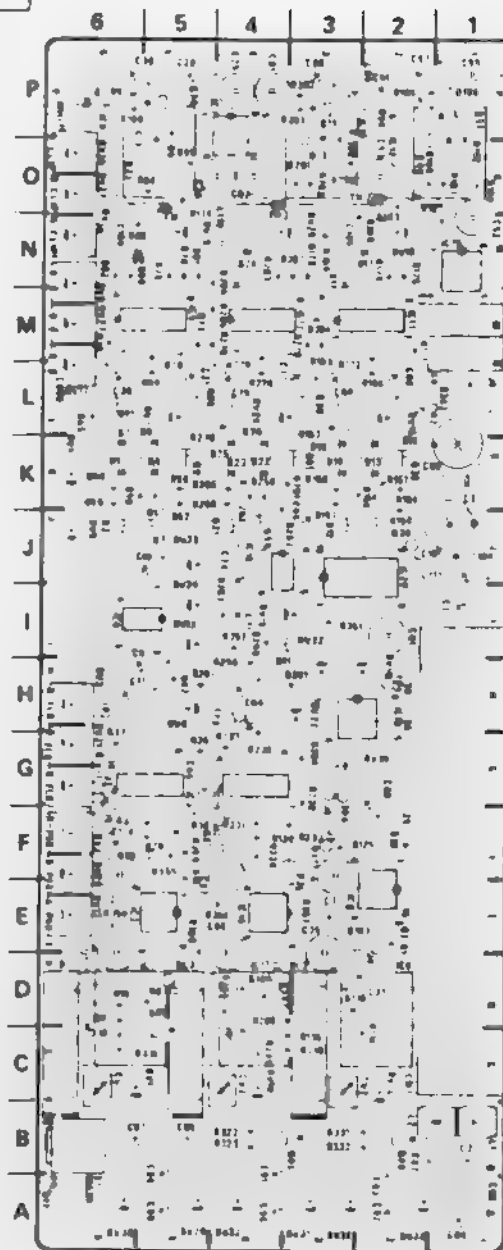
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BVP-7 (J)
BVP-7P (EK)
BVP-7000HS (UC)
BVP-7000HS (J)
BVP-7000HSP (EK)

PR-121/121H/121P

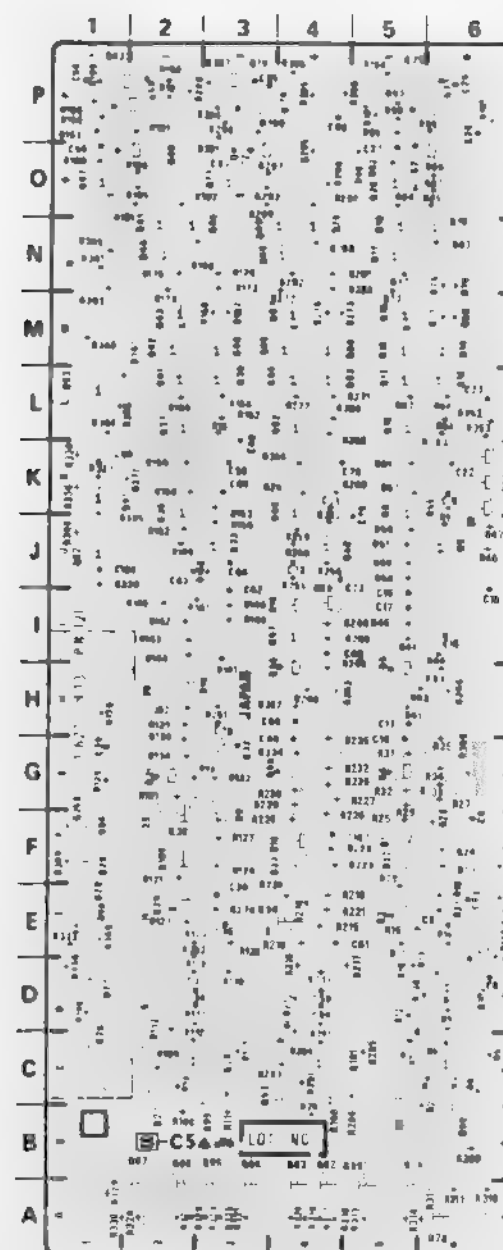
PR-121/121H/121P

PR-121/121H/121P

CN1	E-1	IC12	O-1	Q46	N-2	Q102	D-6
		IC13	D-4	Q47	O-1	Q103	E-2
CV1	C-6	IC14	E-4	Q48	O-2	Q104	D-4
CV2	C-3	IC15	G-4	Q49	O-2	Q105	F-2
CV3	C-4	IC16	J-4	Q50	P-2		
		IC17	M-4	Q51	P-1	RV1	C-6
D1	F-5	IC18	O-3	Q52	P-1	RV2	F-6
D2	K-6	IC19	N-1	Q53	C-4	RV3	H-6
D3	J-6	IC20	J-2	Q54	E-4	RV4	H-5
D4	K-5			Q55	G-4	RV5	J-6
D5	K-6	Q1	C-5	Q56	H-4	RV6	K-6
D6	K-5	Q2	C-6	Q57	I-4	RV7	L-5
D7	K-6	Q3	E-5	Q58	J-4	RV8	N-6
D8	N-6	Q4	G-5	Q59	J-4	RV9	N-5
D9	F-3	Q5	H-5	Q60	K-4	RV10	C-2
D10	H-2	Q6	J-6	Q61	K-3	RV11	G-6
D11	I-3	Q7	J-5	Q62	L-4	RV12	E-6
D12	J-3	Q8	K-5	Q63	L-4	RV13	I-5
D13	K-2	Q9	K-5	Q64	M-4	RV14	H-2
D14	K-3	Q10	L-5	Q65	L-4	RV15	I-3
D15	K-2	Q11	L-6	Q66	M-4	RV16	L-2
D16	K-3	Q12	L-6	Q67	M-4	RV17	L-6
D17	N-2	Q13	L-5	Q68	N-4	RV18	N-2
D18	F-4	Q14	M-6	Q69	N-4	RV19	C-4
D19	I-4	Q15	M-5	Q70	N-4	RV20	F-6
D20	I-4	Q16	M-5	Q71	O-3	RV21	G-6
D21	J-4	Q17	N-5	Q72	O-3	RV22	H-3
D22	K-4	Q18	N-5	Q73	P-3	RV23	H-3
D23	K-4	Q19	N-6	Q74	P-3	RV24	I-5
D24	K-4	Q20	O-5	Q75	P-3	RV25	J-5
D25	K-4	Q21	O-6	Q76	P-3	RV26	L-4
D26	N-4	Q22	P-6	Q77	A-6	RV27	M-6
D27	D-1	Q23	P-6	Q78	A-5	RV28	N-3
D28	E-1	Q24	P-5	Q79	A-5	RV29	A-5
D29	F-1	Q25	P-5	Q80	C-5	RV30	A-6
D30	K-6	Q26	C-1	Q81	C-5	RV31	A-3
D31	F-5	Q27	C-2	Q82	A-4	RV32	A-4
D32	F-4	Q28	C-2	Q83	A-4	RV33	A-2
D33	F-4	Q29	E-2	Q84	A-3	RV34	A-3
D34	K-6	Q30	F-2	Q85	B-3	RV35	O-6
		Q31	G-2	Q86	A-3	RV36	N-6
DL1	C-6	Q32	G-3	Q87	A-2	RV37	O-6
DL2	C-3	Q33	J-3	Q88	B-2	RV38	G-3
DL3	C-5	Q34	J-2	Q89	E-1		
		Q35	K-2	Q90	K-1	S1	B-6
IC1	D-6	Q36	K-2	Q91	J-1	S3	M-1
IC2	E-5	Q37	L-1	Q92	L-1	S4	M-1
IC3	G-5	Q38	L-3	Q93	L-1		
IC4	I-5	Q39	L-3	Q94	L-4	TH1	O-5
IC5	M-5	Q40	M-3	Q95	F-5	TH2	O-2
IC6	O-5	Q41	L-2	Q96	F-4	TH3	O-4
IC7	P-4	Q42	M-2	Q97	B-6		
IC8	D-2	Q43	M-2	Q98	C-3	TP2	H-6
IC9	E-2	Q44	N-2	Q99	C-4	TP4	G-3
IC10	H-2	Q45	N-2	Q100	C-4	TP5	H-2
IC11	M-2			Q101	C-4	TP8	H-4



C-21 (d)

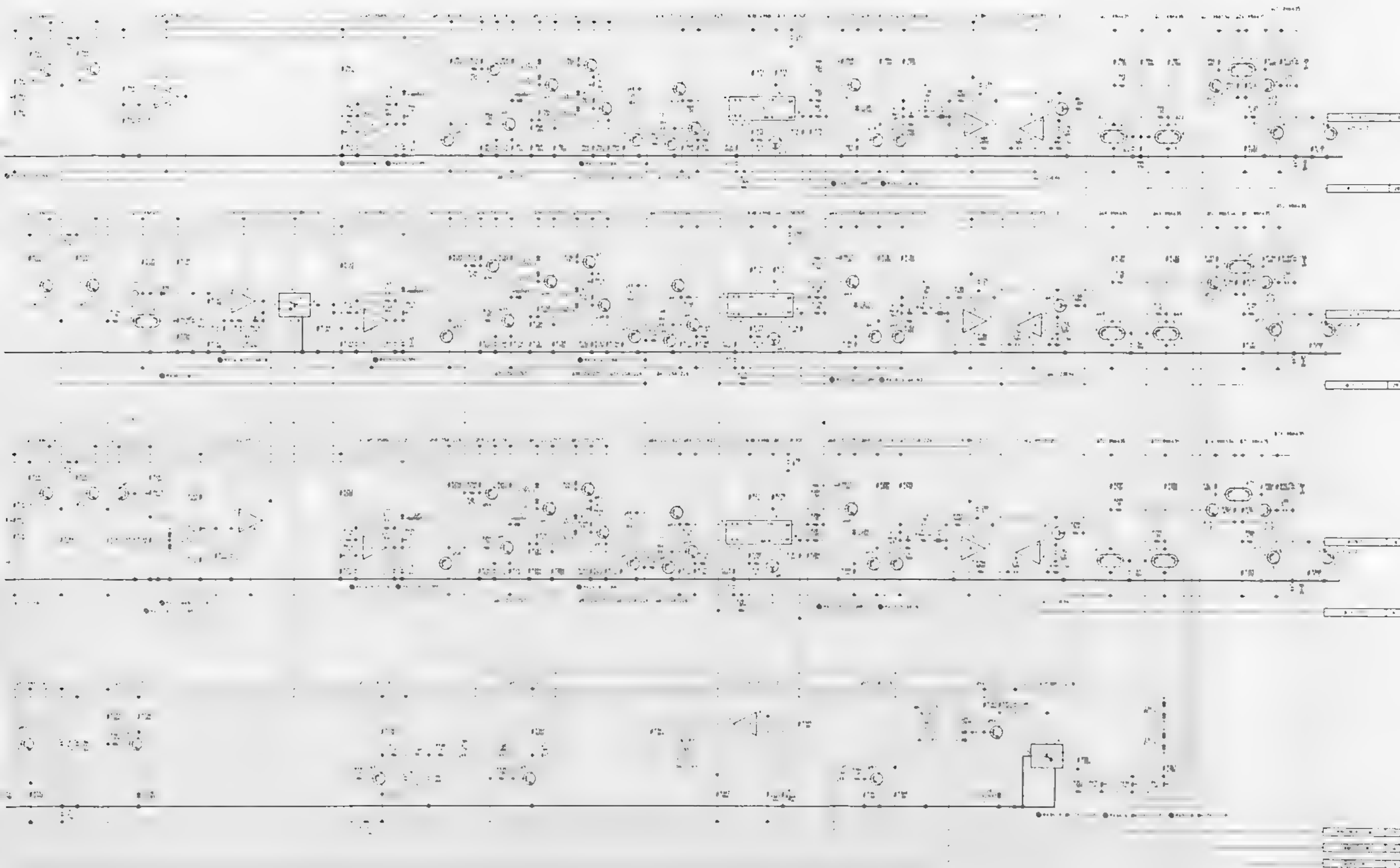


C-22 (d)

PR-121/121H/121P

CN1	E-1	IC12	O-1	Q46	N-2	Q102	D-6
		IC13	D-4	Q47	O-1	Q103	E-2
CV1	C-6	IC14	E-4	Q48	O-2	Q104	D-4
CV2	C-3	IC15	G-4	Q49	O-2	Q105	F-2
CV3	C-4	IC16	J-4	Q50	P-2		
		IC17	M-4	Q51	P-1	RV1	C-6
D1	F-5	IC18	O-3	Q52	P-1	RV2	F-6
D2	K-6	IC19	N-1	Q53	C-4	RV3	H-6
D3	J-6	IC20	J-2	Q54	E-4	RV4	H-5
D4	K-5			Q55	G-4	RV5	J-6
D5	K-6	Q1	C-5	Q56	H-4	RV6	K-6
D6	K-5	Q2	C-6	Q57	I-4	RV7	L-5
D7	K-6	Q3	E-5	Q58	J-4	RV8	N-6
D8	N-6	Q4	G-5	Q59	J-4	RV9	N-5
D9	F-3	Q5	H-5	Q60	K-4	RV10	C-2
D10	H-2	Q6	J-6	Q61	K-3	RV11	G-6
D11	I-3	Q7	J-5	Q62	L-4	RV12	E-6
D12	J-3	Q8	K-5	Q63	L-4	RV13	I-5
D13	K-2	Q9	K-5	Q64	M-4	RV14	H-2
D14	K-3	Q10	L-5	Q65	L-4	RV15	I-3
D15	K-2	Q11	L-6	Q66	M-4	RV16	L-2
D16	K-3	Q12	L-6	Q67	M-4	RV17	L-6
D17	N-2	Q13	L-5	Q68	N-4	RV18	N-2
D18	F-4	Q14	M-6	Q69	N-4	RV19	C-4
D19	I-4	Q15	M-5	Q70	N-4	RV20	F-6
D20	I-4	Q16	M-5	Q71	O-3	RV21	G-6
D21	J-4	Q17	N-5	Q72	O-3	RV22	H-3
D22	K-4	Q18	N-5	Q73	P-3	RV23	H-3
D23	K-4	Q19	N-6	Q74	P-3	RV24	I-5
D24	K-4	Q20	O-5	Q75	P-3	RV25	J-5
D25	K-4	Q21	O-6	Q76	P-3	RV26	L-4
D26	N-4	Q22	P-6	Q77	A-6	RV27	M-6
D27	D-1	Q23	P-6	Q78	A-5	RV28	N-3
D28	E-1	Q24	P-5	Q79	A-5	RV29	A-5
D29	F-1	Q25	P-5	Q80	C-5	RV30	A-6
D30	K-6	Q26	C-1	Q81	C-5	RV31	A-3
D31	F-5	Q27	C-2	Q82	A-4	RV32	A-4
D32	F-4	Q28	C-2	Q83	A-4	RV33	A-2
D33	F-4	Q29	E-2	Q84	A-3	RV34	A-3
D34	K-6	Q30	F-2	Q85	B-3	RV35	O-6
		Q31	G-2	Q86	A-3	RV36	N-6
DL1	C-6	Q32	G-3	Q87	A-2	RV37	O-6
DL2	C-3	Q33	J-3	Q88	B-2	RV38	G-3
DL3	C-5	Q34	J-2	Q89	E-1		
		Q35	K-2	Q90	K-1	S1	B-6
IC1	D-6	Q36	K-2	Q91	J-1	S3	M-1
IC2	E-5	Q37	L-1	Q92	L-1	S4	M-1
IC3	G-5	Q38	L-3	Q93	L-1		
IC4	I-5	Q39	L-3	Q94	L-4	TH1	O-5
IC5	M-5	Q40	M-3	Q95	F-5	TH2	O-2
IC6	O-5	Q41	L-2	Q96	F-4	TH3	O-4
IC7	P-4	Q42	M-2	Q97	B-6		
IC8	D-2	Q43	M-2	Q98	C-3	TP2	H-6
IC9	E-2	Q44	N-2	Q99	C-4	TP4	G-3
IC10	H-2	Q45	N-2	Q100	C-4	TP5	H-2
IC11	M-2			Q101	C-4	TP8	H-4

BVP-7 (J) 1-A7
BVP-7 (UC) 1-A7
BVP-7P (EK) 1-A6
BVP-7000HS (J) 1-A2
BVP-7000HS (UC) 1ST
BVP-7000HSP (EK) 1ST



1

2

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6

C-25

C-26

G

H

I

J

K

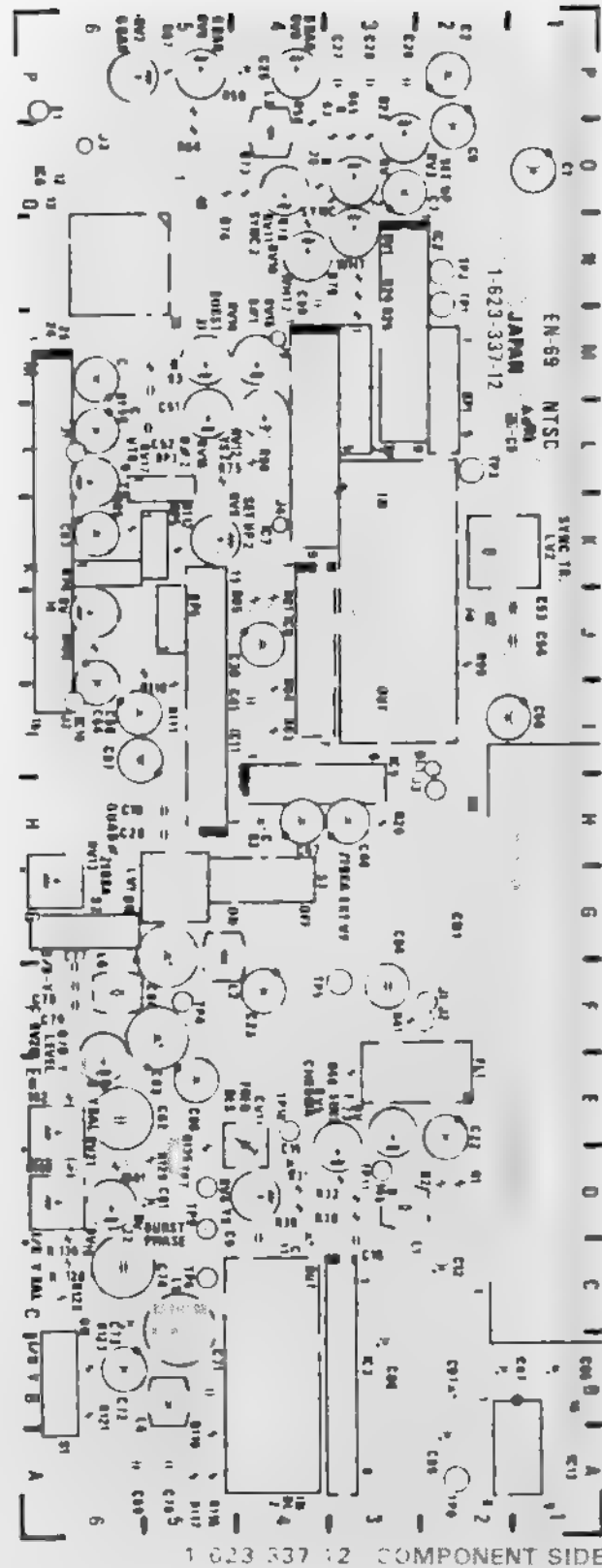
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DB-BVP7-PR12 159

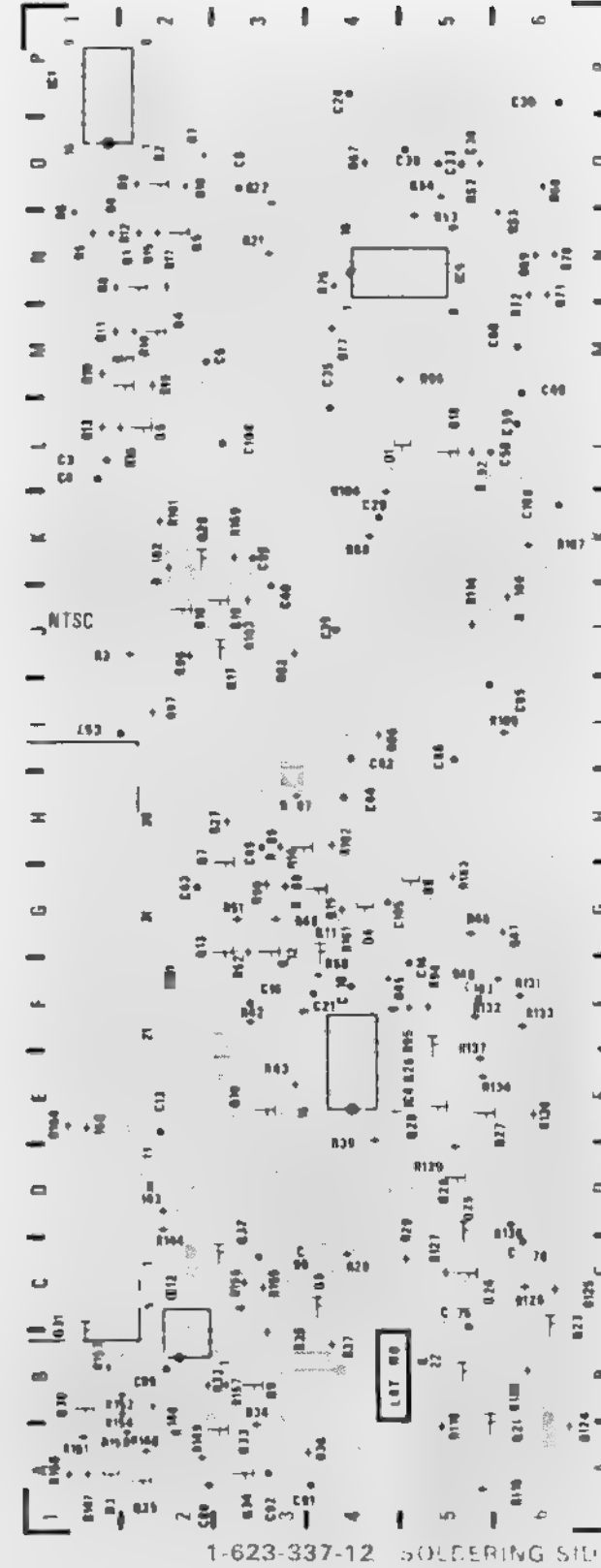
Ser.No. 10001-10210 (UC)
30001-30130 (J)
40001-40130 (EK)

EN-69 1-623-337-12

CN1	F-1	Q31	C-1
		Q32	C-3
CV11	E-4	Q33	A-3
		Q34	A-3
		Q35	A-2
D1	L-5		
D2	J-2		
D3	A-1	RP1	M-6
D4	G-4	RP2	M-3
D5	G-5	RP3	L-5
		RP4	K-6
D.1	J-3	RP5	K-5
D.2	B-4	RP6	J-5
E1	P-6	RV1	N-3
		RV2	O-3
FL1	E-2	RV3	O-3
		RV4	D-4
		RV5	D-3
IC1	P-1	RV6	P-5
IC2	M-3	RV7	P-6
IC3	B-3	RV8	P-4
IC4	E-4	RV9	K-5
IC5	N-4	RV10	N-4
IC6	N-6	RV11	O-4
IC7	L-4	RV12	L-4
IC8	J-4	RV13	G-6
IC9	H-4	RV14	M-5
IC10	K-6	RV15	M-4
IC11	I-5	RV16	L-5
IC12	B-2	RV17	L-6
IC13	A-1	RV18	J-6
		RV19	D-6
LV1	G-5	RV20	E-6
LV2	K-1	RV21	E-6
		RV22	D-6
		RV23	E-3
Q1	N-2		
Q2	O-2		
Q3	M-2		
Q4	M-2	S1	B-6
Q5	N-2	S2	G-6
Q6	L-2	S3	G-4
Q7	H-3		
Q8	C-4	TP1	N-2
Q9	B-3	TP2	N-2
Q10	E-3	TP3	L-2
Q11	G-4	TP4	F-5
Q12	G-3	TP5	F-3
Q13	G-3	TP6	C-5
Q14	H-3	TP7	D-5
Q15	G-4	TP8	A-2
Q16	L-5	TP9	D-5
Q17	J-3	TP10	E-4
Q18	J-2	TP11	D-3
Q19	J-3		
Q20	K-2		
Q21	A-5		
Q22	B-5		
Q23	C-6		
Q24	C-5		
Q25	D-5		
Q26	F-5		
Q27	E-5		
Q28	E-5		
Q29	D-5		
Q30	B-1		



C-27 (a)



C-28 (a)

EN-69 1-623-337-12

CN1	F-1	Q31	C-1
		Q32	C-3
CV11	E-4	Q33	A-3
		Q34	A-3
		Q35	A-2
D1	L-5		
D2	J-2		
D3	A-1	RP1	M-6
D4	G-4	RP2	M-3
D5	G-5	RP3	L-5
		RP4	K-6
DL1	J-3	RP5	K-5
DL2	B-4	RP6	J-5
E1	P-6	RV1	N-3
		RV2	O-3
FL1	E-2	RV3	O-3
		RV4	D-4
		RV5	D-3
IC1	P-1	RV6	P-5
IC2	M-3	RV7	P-6
IC3	B-3	RV8	P-4
IC4	E-4	RV9	K-5
IC5	N-4	RV10	N-4
IC6	N-6	RV11	O-4
IC7	L-4	RV12	L-4
IC8	J-4	RV13	G-6
IC9	H-4	RV14	M-5
IC10	K-6	RV15	M-4
IC11	I-5	RV16	L-5
IC12	B-2	RV17	L-6
IC13	A-1	RV18	J-6
		RV19	D-6
LV1	G-5	RV20	E-6
LV2	K-1	RV21	E-6
		RV22	D-6
		RV23	E-3
Q1	N-2		
Q2	O-2		
Q3	M-2		
Q4	M-2	S1	B-6
Q5	N-2	S2	G-6
Q6	L-2	S3	G-4
Q7	H-3		
Q8	C-4	TP1	N-2
Q9	B-3	TP2	N-2
Q10	E-3	TP3	L-2
Q11	G-4	TP4	F-5
Q12	G-3	TP5	F-3
Q13	G-3	TP6	C-5
Q14	H-3	TP7	D-5
Q15	G-4	TP8	A-2
Q16	L-5	TP9	D-5
Q17	J-3	TP10	E-4
Q18	J-2	TP11	D-3
Q19	J-3		
Q20	K-2		
Q21	A-5		
Q22	B-5		
Q23	C-6		
Q24	C-5		
Q25	D-5		
Q26	F-5		
Q27	E-5		
Q28	E-5		
Q29	D-5		
Q30	B-1		

EN-69

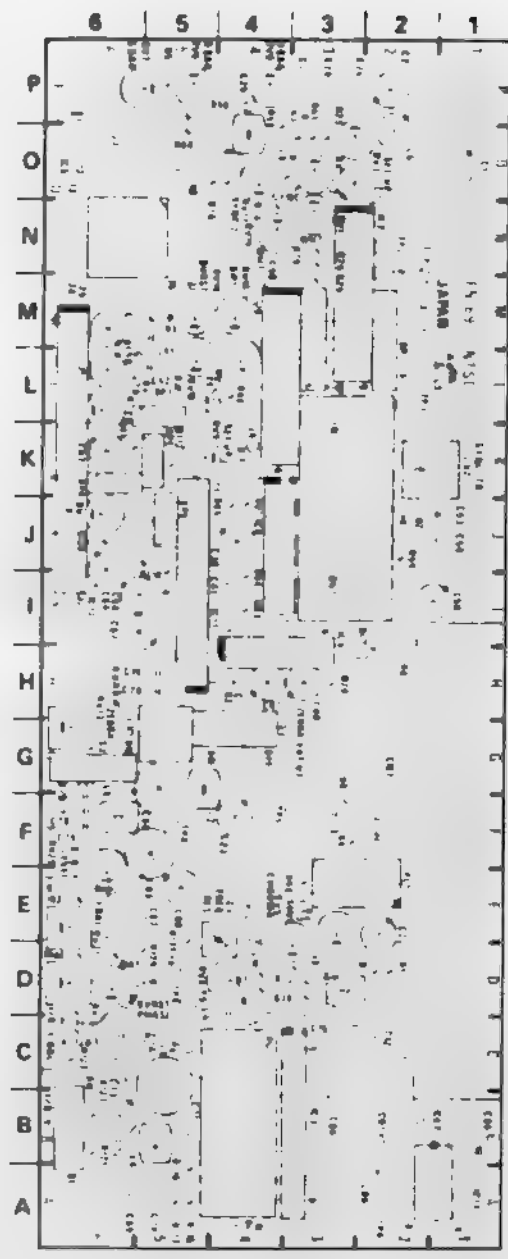
CN1	F-1	Q31	C-1
		Q32	C-3
CV1	E-4	Q33	A-3
		Q34	A-3
		Q35	A-2
D1	L-5		
D2	J-2		
D3	A-1	RP1	M-6
D4	G-4	RP2	M-3
D5	G-5	RP3	L-5
		RP4	K-6
DL1	J-3	RP5	K-5
DL2	B-4	RP6	J-5
E1	P-6	RV1	N-3
		RV2	O-3
FL1	E-2	RV3	O-3
		RV4	D-4
		RV5	D-3
IC1	P-1	RV6	P-5
IC2	M-3	RV7	P-6
IC3	B-3	RV8	P-4
IC4	E-4	RV9	K-5
IC5	N-4	RV10	N-4
IC6	N-6	RV11	O-4
IC7	L-4	RV12	L-4
IC8	J-4	RV13	G-6
IC9	H-4	RV14	M-5
IC10	K-6	RV15	M-4
IC11	I-5	RV16	L-5
IC12	B-2	RV17	L-6
IC13	A-1	RV18	J-6
		RV19	D-6
LV1	G-5	RV20	E-6
LV2	K-1	RV21	E-6
		RV22	D-6
		RV23	E-3
Q1	N-2		
Q2	O-2		
Q3	M-2		
Q4	M-2	S1	B-6
Q5	N-2	S2	G-6
Q6	L-2	S3	G-4
Q7	H-3		
Q8	C-4	TP1	N-2
Q9	B-3	TP2	N-2
Q10	E-3	TP3	L-2
Q11	G-4	TP4	F-5
Q12	G-3	TP5	F-3
Q13	G-3	TP6	C-5
Q14	H-3	TP7	D-5
Q15	G-4	TP8	A-2
Q16	L-5	TP9	D-5
Q17	J-3	TP10	E-4
Q18	J-2	TP11	D-3
Q19	J-3		
Q20	K-2		
Q21	A-5		
Q22	B-5		
Q23	C-6		
Q24	C-5		
Q25	D-5		
Q26	F-5		
Q27	E-5		
Q28	E-5		
Q29	D-5		
Q30	B-1		

Ser. No. 10211-	BVP-7 (UC)
30131-	BVP-7 (J)
10001-	BVP-7000HS (UC)
30001-	BVP-7000HS (J)

Ser. No

EN-69 1-623-337-13

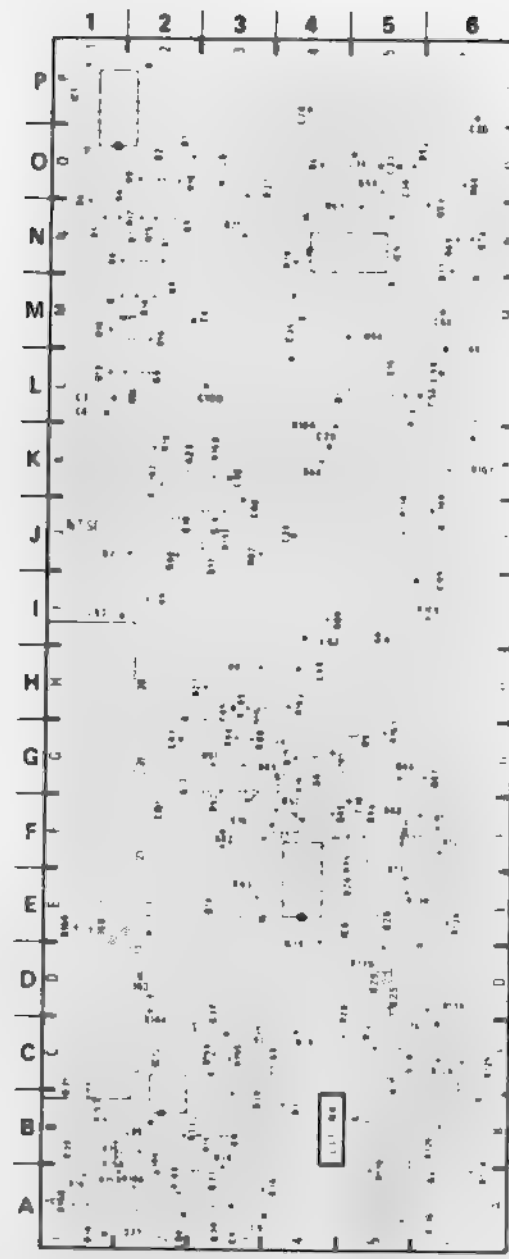
CN1	F-1	Q31	C-1
		Q32	C-3
CV11	E-4	Q33	A-3
		Q34	A-3
		Q35	A-2
D1	L-5		
D2	J-2		
D3	A-1	RP1	M-6
D4	G-4	RP2	M-3
D5	G-5	RP3	L-5
		RP4	K-6
DL1	J-3	RP5	K-5
DL2	B-4	RP6	J-5
E1	P-6	RV1	N-3
		RV2	O-3
FL1	E-2	RV3	O-3
		RV4	D-4
IC1	P-1	RV5	D-3
IC2	M-3	RV6	P-5
IC3	B-3	RV7	P-6
IC4	E-4	RV8	P-4
IC5	N-4	RV9	K-5
IC6	N-6	RV10	N-4
IC7	L-4	RV11	O-4
IC8	J-4	RV12	L-4
IC9	H-4	RV13	G-6
IC10	K-6	RV14	M-5
IC11	I-5	RV15	M-4
IC12	B-2	RV16	L-5
IC13	A-1	RV17	L-6
		RV18	J-6
LV1	G-5	RV19	D-6
LV2	K-1	RV20	E-6
		RV21	E-6
		RV22	D-6
		RV23	E-3
Q1	N-2		
Q2	O-2		
Q3	M-2		
Q4	M-2	S1	B-6
Q5	N-2	S2	G-6
Q6	L-2	S3	G-4
Q7	H-3		
Q8	C-4	TP1	N-2
Q9	B-3	TP2	N-2
Q10	E-3	TP3	L-2
Q11	G-4	TP4	F-5
Q12	G-3	TP5	F-3
Q13	G-3	TP6	C-5
Q14	H-3	TP7	D-5
Q15	G-4	TP8	A-2
Q16	L-5	TP9	D-5
Q17	J-3	TP10	E-4
Q18	J-2	TP11	D-3
Q19	J-3		
Q20	K-2		
Q21	A-5		
Q22	B-5		
Q23	C-6		
Q24	C-5		
Q25	D-5		
Q26	F-5		
Q27	E-5		
Q28	E-5		
Q29	D-5		
Q30	B-1		



C-27 (b)

EN-69 1-623-337-13

CN1	F-1	Q31	C-1
		Q32	C-3
CV11	E-4	Q33	A-3
		Q34	A-3
		Q35	A-2
D1	L-5		
D2	J-2		
D3	A-1	RP1	M-6
D4	G-4	RP2	M-3
D5	G-5	RP3	L-5
		RP4	K-6
DL1	J-3	RP5	K-5
DL2	B-4	RP6	J-5
E1	P-6	RV1	N-3
		RV2	O-3
FL1	E-2	RV3	O-3
		RV4	D-4
IC1	P-1	RV5	D-3
IC2	M-3	RV6	P-5
IC3	B-3	RV7	P-6
IC4	E-4	RV8	P-4
IC5	N-4	RV9	K-5
IC6	N-6	RV10	N-4
IC7	L-4	RV11	O-4
IC8	J-4	RV12	L-4
IC9	H-4	RV13	G-6
IC10	K-6	RV14	M-5
IC11	I-5	RV15	M-4
IC12	B-2	RV16	L-5
IC13	A-1	RV17	L-6
		RV18	J-6
LV1	G-5	RV19	D-6
LV2	K-1	RV20	E-6
		RV21	E-6
		RV22	D-6
		RV23	E-3
Q1	N-2		
Q2	O-2		
Q3	M-2		
Q4	M-2	S1	B-6
Q5	N-2	S2	G-6
Q6	L-2	S3	G-4
Q7	H-3		
Q8	C-4	TP1	N-2
Q9	B-3	TP2	N-2
Q10	E-3	TP3	L-2
Q11	G-4	TP4	F-5
Q12	G-3	TP5	F-3
Q13	G-3	TP6	C-5
Q14	H-3	TP7	D-5
Q15	G-4	TP8	A-2
Q16	L-5	TP9	D-5
Q17	J-3	TP10	E-4
Q18	J-2	TP11	D-3
Q19	J-3		
Q20	K-2		
Q21	A-5		
Q22	B-5		
Q23	C-6		
Q24	C-5		
Q25	D-5		
Q26	F-5		
Q27	E-5		
Q28	E-5		
Q29	D-5		
Q30	B-1		



C-28 (b)

EN

CN

CV

D2

D3

D4

D5

DL

E1

FL

IC

IC2

IC3

IC4

IC5

IC6

IC7

IC8

IC9

IC10

IC11

IC12

IC13

LV

LV2

Q1

Q2

Q3

Q4

Q5

Q6

Q7

Q8

Q9

Q10

Q11

Q12

Q13

Q14

Q15

Q16

Q17

Q18

Q19

Q20

Q21

Q22

Q23

Q24

Q25

Q26

Q27

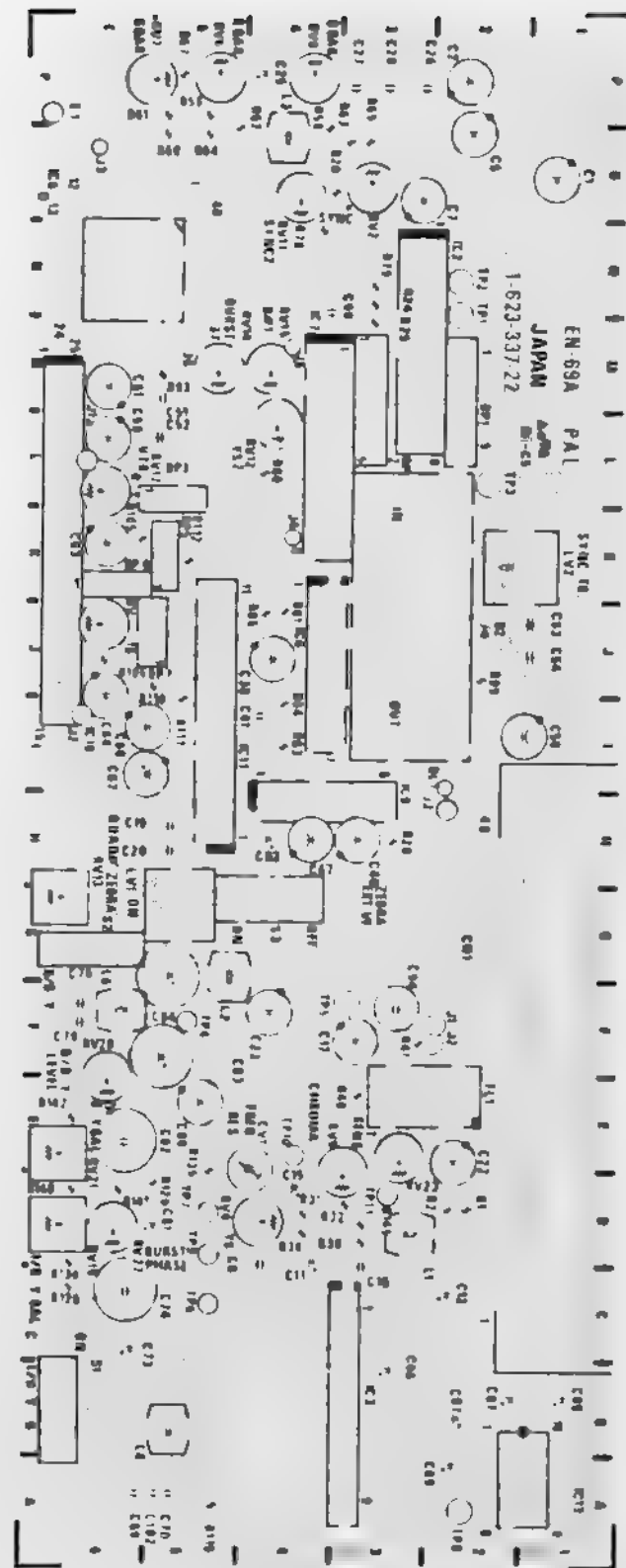
Q28

Q29

Q30

EN-69/69P 1-623-337-22

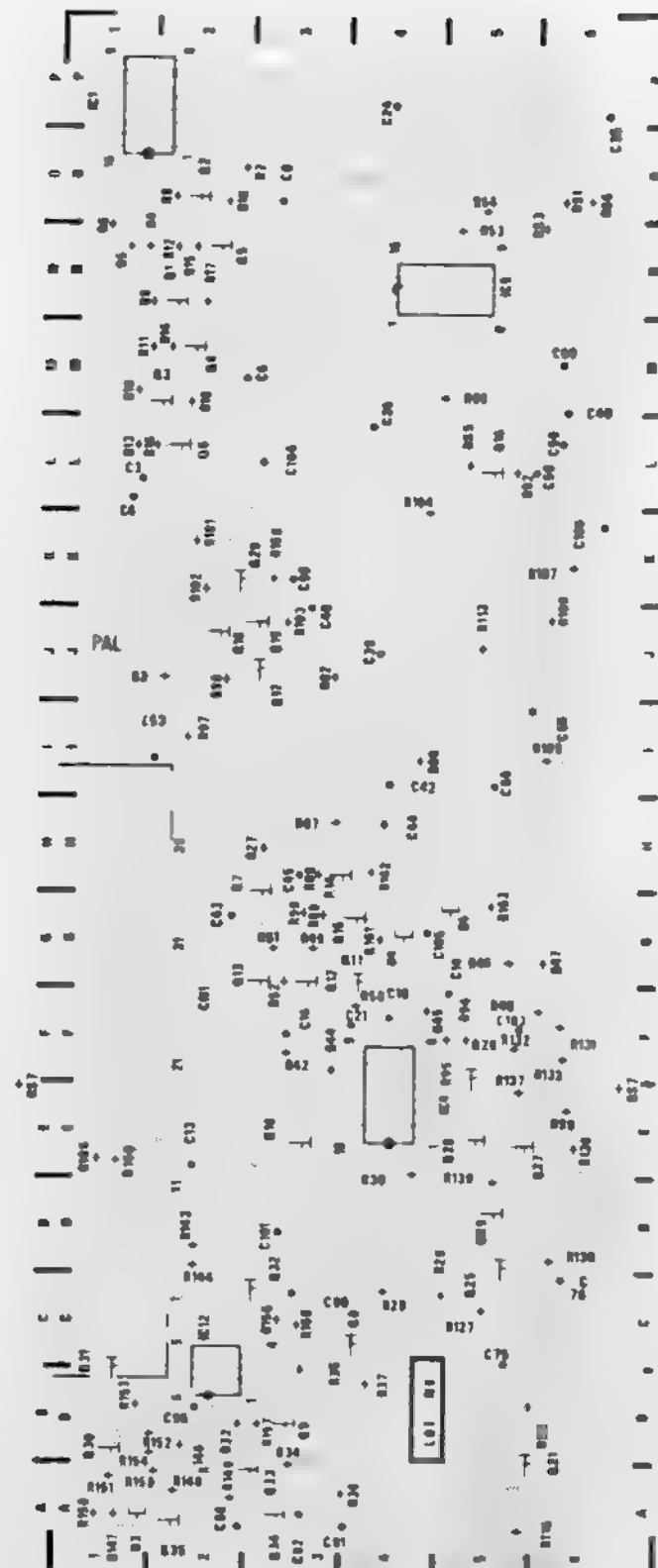
CN1 G-2 Q31 C-1
 CN11 E-4 Q33 A-3
 Q2 J-2 Q35 A-2
 Q3 A-1
 Q4 G-4 RP1 M-6
 Q5 G-5 RP2 M-3
 Q6 L-2
 Q7 H-3 RP4 K-6
 Q8 C-4 RP5 K-5
 Q9 B-3 RP6 J-5
 Q10 E-3 RP7 J-5
 Q11 G-4
 Q12 G-3
 Q13 G-3
 Q14 H-3
 Q15 G-4
 Q16 L-5
 Q17 J-3
 Q18 J-2
 Q19 J-3
 Q20 K-2
 Q21 A-5
 Q25 D-5
 Q26 F-5
 Q27 E-5
 Q28 E-5
 Q29 D-5
 Q30 B-1



C-29 (a)

EN-69/69P 1-623-337-22

CN1 G-2 Q31 C-1
 CN11 E-4 Q33 A-3
 Q2 J-2 Q35 A-2
 Q3 A-1
 Q4 G-4 RP1 M-6
 Q5 G-5 RP2 M-3
 Q6 L-2
 Q7 H-3 RP4 K-6
 Q8 C-4 RP5 K-5
 Q9 B-3 RP6 J-5
 Q10 E-3 RP7 J-5
 Q11 G-4
 Q12 G-3
 Q13 G-3
 Q14 H-3
 Q15 G-4
 Q16 L-5
 Q17 J-3
 Q18 J-2
 Q19 J-3
 Q20 K-2
 Q21 A-5
 Q25 D-5
 Q26 F-5
 Q27 E-5
 Q28 E-5
 Q29 D-5
 Q30 B-1



C-30 (a)

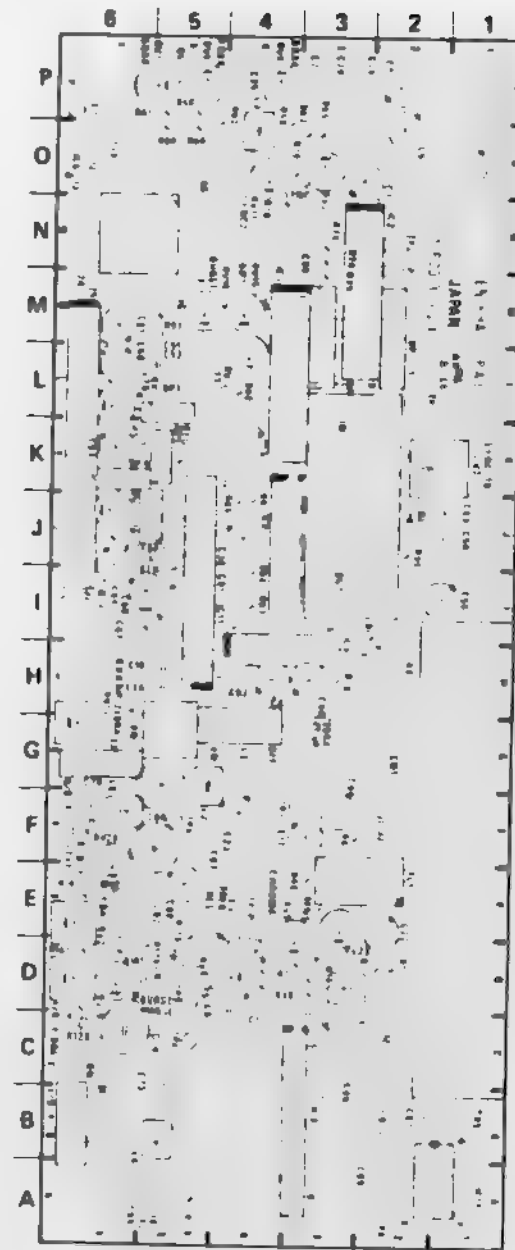
BVP-7 (J) 1-R
 BVP-7 (UC) 1-R
 BVP-7P (EK) 1-R 5

Ser. No. 40131-
40001-

BVP-7P (EK)
BVP-7000HSP (EK)

EN-69P 1-693-337-23

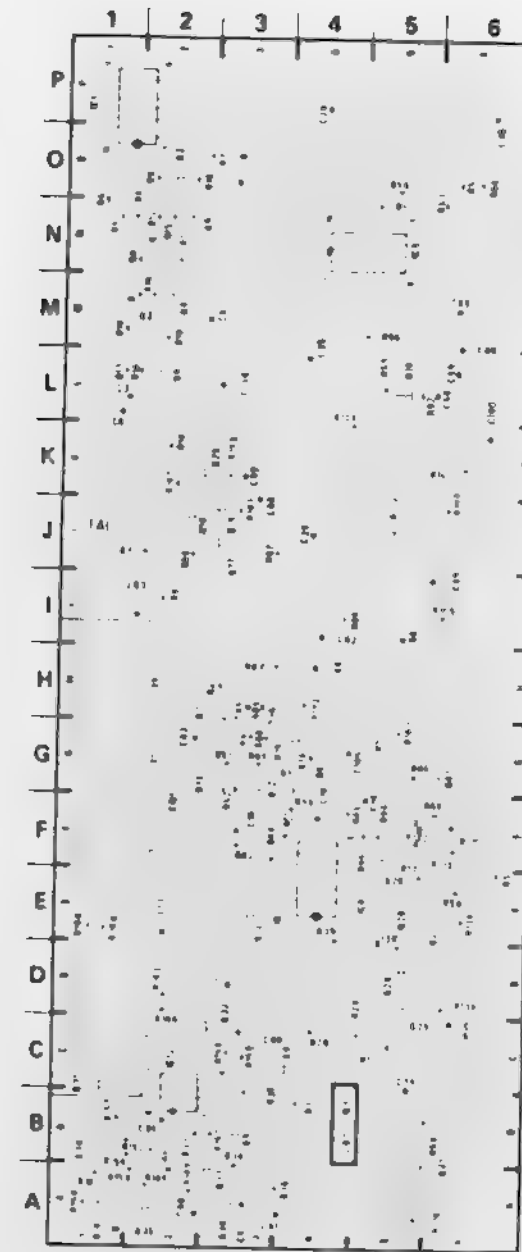
CN1 G-2 Q31 C-1
Q32 C-3
CV11 E-4 Q33 A-3
Q34 A-3
Q35 A-2
D2 J-2
D3 A-1
D4 G-4 RP1 M-6
D5 G-5 RP2 M-3
RP3 L-5
DL1 J-3 RP4 K-6
RP5 K-5
EI P-6 RP6 J-5
RP7 J-5
FL1 E-2
RV2 O-3
IC1 P-1 RV4 D-4
IC2 M-3 RV5 E-3
IC3 B-3 RV6 P-5
IC4 E-4 RV7 P-5
IC5 N-5 RV8 P-4
IC6 M-6 RV11 O-4
IC7 L-4 RV12 L-4
IC8 J-4 RV13 G-6
IC9 H-3 RV14 M-5
IC10 K-6 RV15 M-4
IC11 I-5 RV16 L-5
IC12 C-1 RV17 L-6
IC13 A-1 RV18 J-6
RV19 D-6
LV1 G-5 RV20 E-6
LV2 K-2 RV21 E-6
RV22 D-6
RV23 E-3
Q1 N-2
Q2 O-2
Q3 M-2 S1 B-6
Q4 M-2 S2 G-6
Q5 N-2 S3 G-4
Q6 L-2
Q7 H-3 TP1 N-2
Q8 C-4 TP2 N-2
Q9 B-3 TP3 L-2
Q10 E-3 TP4 F-5
Q11 G-4 TP5 F-3
Q12 G-3 TP6 C-5
Q13 G-3 TP7 D-5
Q14 H-3 TP8 A-2
Q15 G-4 TP9 D-5
Q16 L-5 TP10 E-4
Q17 J-3 TP11 D-3
Q18 J-2
Q19 J-3
Q20 K-2
Q21 A-5
Q25 D-5
Q26 F-5
Q27 E-5
Q28 E-5
Q29 D-5
Q30 B-1



C-29 (b)

EN-69P 1-693-337-23

CN1 G-2 Q31 C-1
Q32 C-3
CV11 E-4 Q33 A-3
Q34 A-3
Q35 A-2
D2 J-2
D3 A-1
D4 G-4 RP1 M-6
D5 G-5 RP2 M-3
RP3 L-5
DL1 J-3 RP4 K-6
RP5 K-5
EI P-6 RP6 J-5
RP7 J-5
FL1 E-2
RV2 O-3
IC1 F-1 RV4 D-4
IC2 M-3 RV5 E-3
IC3 B-3 RV6 P-5
IC4 E-4 RV7 P-5
IC5 N-5 RV8 P-4
IC6 M-6 RV11 O-4
IC7 L-4 RV12 L-4
IC8 J-4 RV13 G-6
IC9 H-3 RV14 M-5
IC10 K-6 RV15 M-4
IC11 I-5 RV16 L-5
IC12 C-1 RV17 L-6
IC13 A-1 RV18 J-6
RV19 D-6
LV1 G-5 RV20 E-6
LV2 K-2 RV21 E-6
RV22 D-6
RV23 E-3
Q1 N-2
Q2 O-2
Q3 M-2 S1 B-6
Q4 M-2 S2 G-6
Q5 N-2 S3 G-4
Q6 L-2
Q7 H-3 TP1 N-2
Q8 C-4 TP2 N-2
Q9 B-3 TP3 L-2
Q10 E-3 TP4 F-5
Q11 G-4 TP5 F-3
Q12 G-3 TP6 C-5
Q13 G-3 TP7 D-5
Q14 H-3 TP8 A-2
Q15 G-4 TP9 D-5
Q16 L-5 TP10 E-4
Q17 J-3 TP11 D-3
Q18 J-2
Q19 J-3
Q20 K-2
Q21 A-5
Q25 D-5
Q26 F-5
Q27 E-5
Q28 E-5
Q29 D-5
Q30 B-1

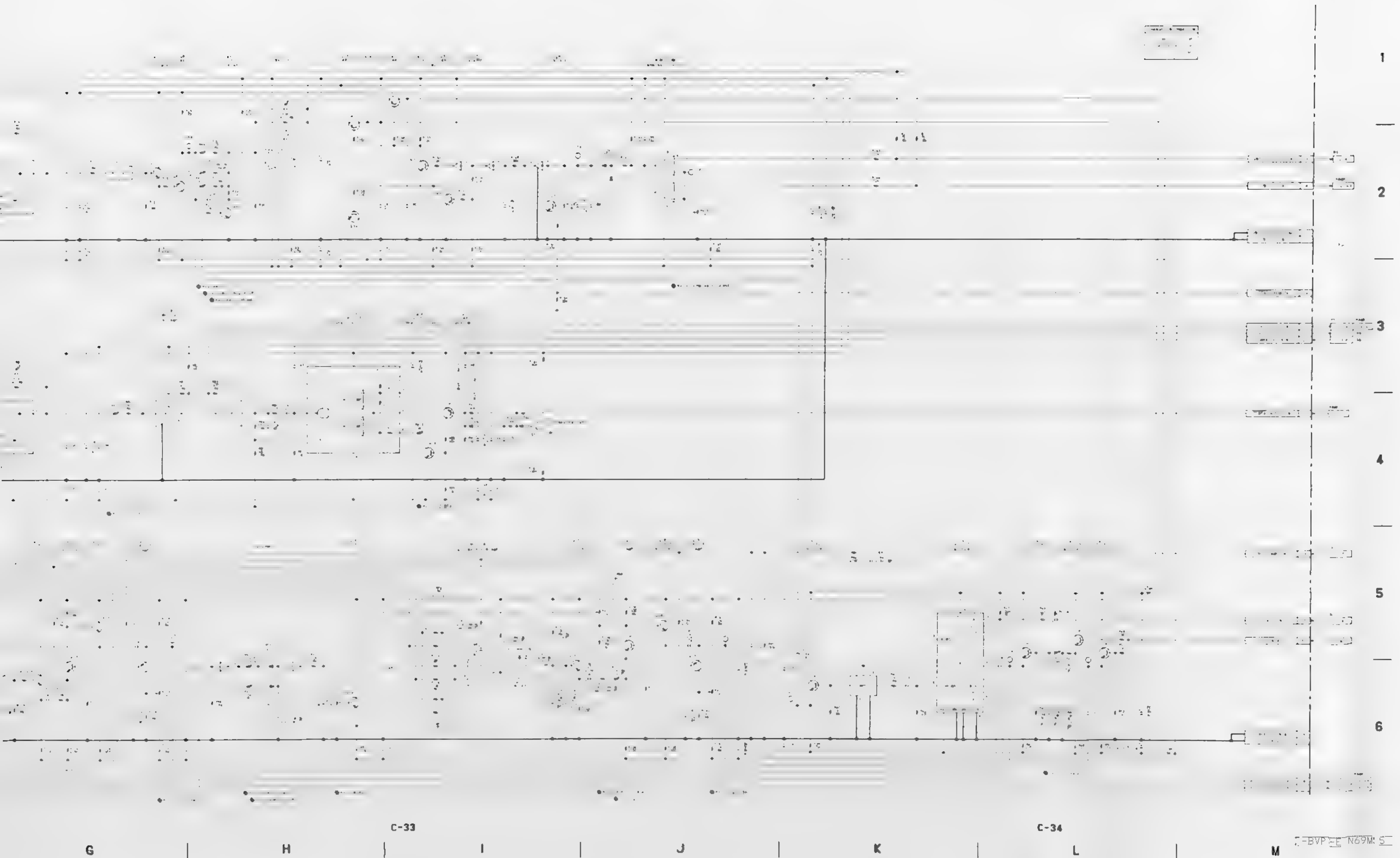


C-30 (b)

BVP-7 (J) 1-R6
BVP-7 (UC) 1-R6
BVP-7P (EK) 1-R6
BVP-7000HS (J) 1-R1
BVP-7000HS (UC) 1ST
BVP-7000HSP (EK) 1ST

EN-69/69P BOARD



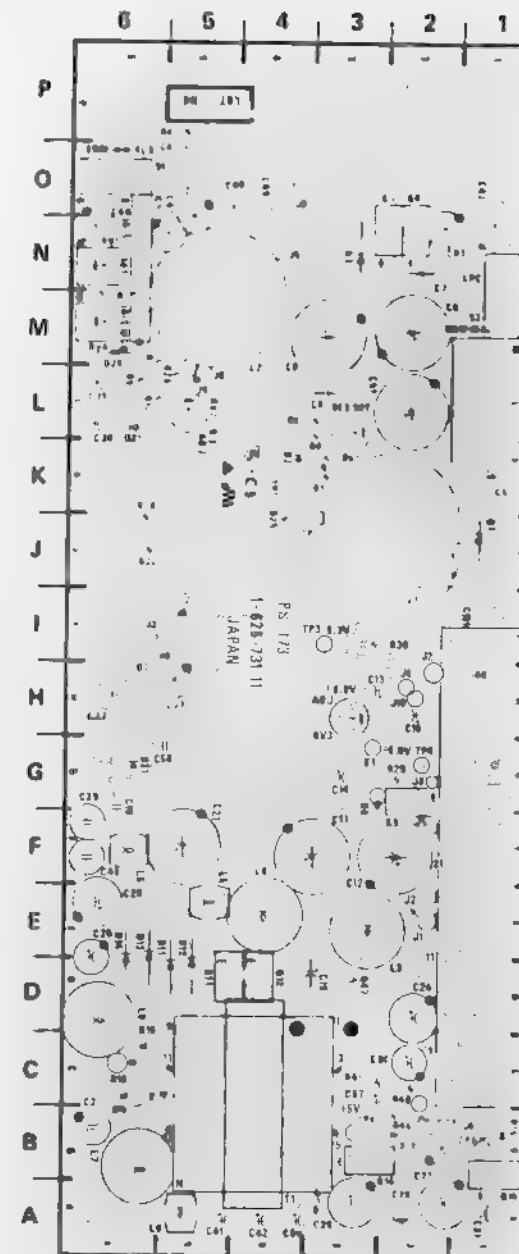


Ser.No.10001-10430 (UC)
30001-30250 (J)
40001-40380 (EK)

PS-173 PS-173

PS-173 I-626-731-II

CN1	F-1	Q3	N-2
		Q4	N-2
D2	K-4	Q8	H-5
D3	N-3	Q9	G-2
D4	A-4	Q10	F-6
D5	G-4	Q11	D-5
D6	G-3	Q12	D-4
D7	J-1	Q13	G-5
D9	D-4	Q14	B-3
D10	G-4	Q15	A-1
D11	D-5	Q17	K-5
D12	D-5	Q18	J-5
D13	E-6	Q19	K-5
D14	D-6	Q21	M-5
D15	C-6	Q22	I-4
D16	C-6	Q23	M-5
D17	C-6	Q24	L-4
D18	C-6	Q26	N-4
D19	B-1	Q27	N-5
D20	B-2	Q28	O-2
D21	L-6	Q29	O-1
D22	I-5	Q31	L-4
D23	N-5	Q34	G-4
D24	N-5	Q35	P-2
D26	M-6		
D27	O-6	RV1	L-3
D28	I-6	RV2	L-5
D31	G-6	RV3	H-3
		RV4	M-6
E1	G-3	RV5	N-6
IC1	P-4	S1	O-6
IC2	I-2	S2	M-1
IC3	C-3		
IC4	K-5	T1	B-4
IC5	N-6		
IC6	P-3	TP1	K-4
IC7	N-6	TP2	J-3
		TP3	I-3
		TP4	G-2
		TP5	B-1
		TP6	B-3

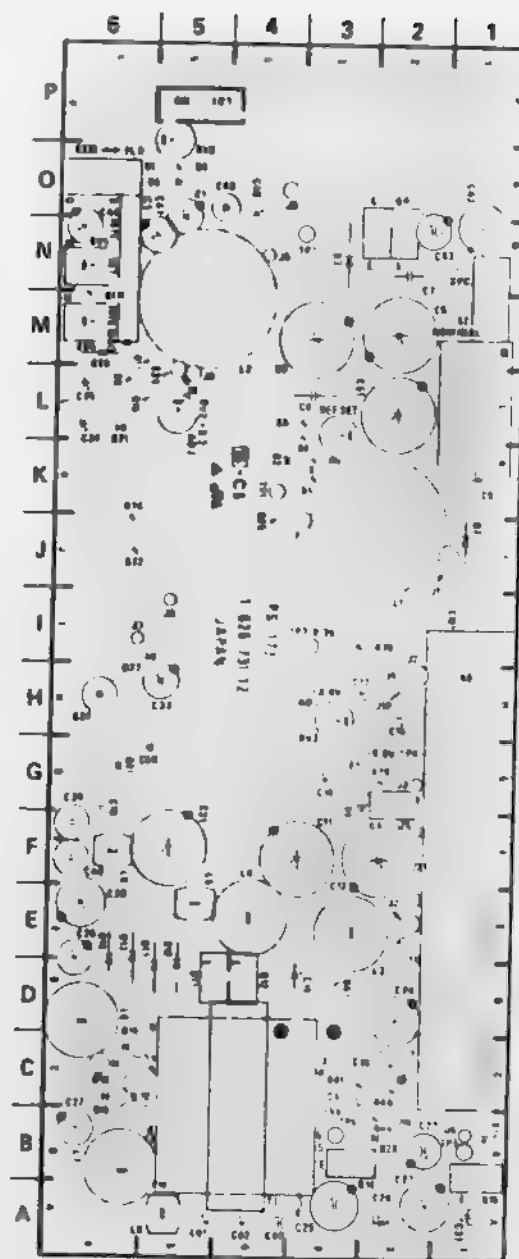


Ser. No. 10431-
30251-
40381-
BVP-7 (UC)
BVP-7 (J)
BVP-7P (EX)

PS-173 PS-173

PS-173 I-626-731-12

CN1	F-1	Q3	N-2
		Q4	N-2
D2	K-4	Q8	H-5
D3	N-3	Q9	G-2
D4	A-4	Q10	F-6
D5	G-4	Q11	D-5
D6	G-3	Q12	D-4
D7	J-1	Q13	G-5
D9	D-4	Q14	B-3
D10	G-4	Q15	A-1
D11	D-5	Q17	K-5
D12	D-5	Q18	J-5
D13	E-6	Q19	K-5
D14	D-6	Q21	M-5
D15	C-6	Q22	I-4
D16	C-6	Q23	M-5
D17	C-6	Q24	L-4
D18	C-6	Q26	N-4
D19	B-1	Q27	N-5
D20	B-2	Q28	O-2
D21	L-6	Q29	O-1
D22	I-5	Q31	L-4
D23	N-5	Q34	G-4
D24	N-5	Q35	P-2
D26	M-6		
D27	O-6	RV1	L-3
D28	I-6	RV2	L-5
D31	G-6	RV3	H-3
		RV4	M-6
E1	G-3	RV5	N-6
		RV6	P-5
IC1	P-4		
IC2	I-2	S1	O-6
IC3	C-3	S2	M-1
IC4	K-5		
IC5	N-6	T1	B-4
IC6	P-3		
IC7	N-6	TP1	K-4
		TP2	J-3
		TP3	I-3
		TP4	G-2
		TP5	B-1
		TP6	B-3
		TP7	N-4



C-37 (b)



C-38 (b)

PS-173 I-626-731-12

CN1	F-1	Q3	N-2
		Q4	N-2
D2	K-4	Q8	H-5
D3	N-3	Q9	G-2
D4	A-4	Q10	F-6
D5	G-4	Q11	D-5
D6	G-3	Q12	D-4
D7	J-1	Q13	G-5
D9	D-4	Q14	B-3
D10	G-4	Q15	A-1
D11	D-5	Q17	K-5
D12	D-5	Q18	J-5
D13	E-6	Q19	K-5
D14	D-6	Q21	M-5
D15	C-6	Q22	I-4
D16	C-6	Q23	M-5
D17	C-6	Q24	L-4
D18	C-6	Q26	N-4
D19	B-1	Q27	N-5
D20	B-2	Q28	O-2
D21	L-6	Q29	O-1
D22	I-5	Q31	L-4
D23	N-5	Q34	G-4
D24	N-5	Q35	P-2
D26	M-6		
D27	O-6	RV1	L-3
D28	I-6	RV2	L-5
D31	G-6	RV3	H-3
		RV4	M-6
E1	G-3	RV5	N-6
		RV6	P-5
IC1	P-4		
IC2	I-2	S1	O-6
IC3	C-3	S2	M-1
IC4	K-5		
IC5	N-6	T1	B-4
IC6	P-3		
IC7	N-6	TP1	K-4
		TP2	J-3
		TP3	I-3
		TP4	G-2
		TP5	B-1
		TP6	B-3
		TP7	N-4

BVP-7 (J) 1-R6
BVP-7 (UC) 1-R6
BVP-7P (EX) 1-R5

PS-173 BOARD
POWER SUPPLY CIRCUIT

BVP-7 (UC) 1-R6
BVP-7 (J) 1-R6
BVP-7P () 1-R
BVP-700
BVP-7000HS
BVP-7000HSF (EK) 1ST

C-39

C-40

A

B

C

D

E

F

G



1

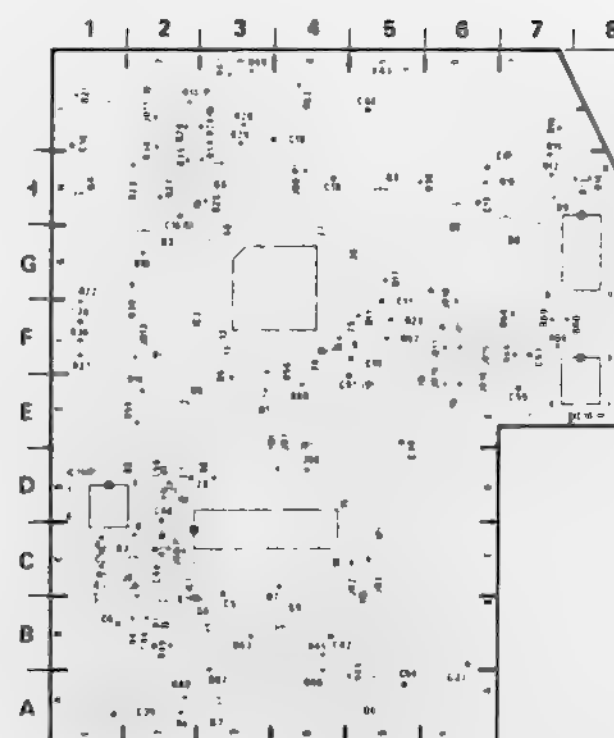
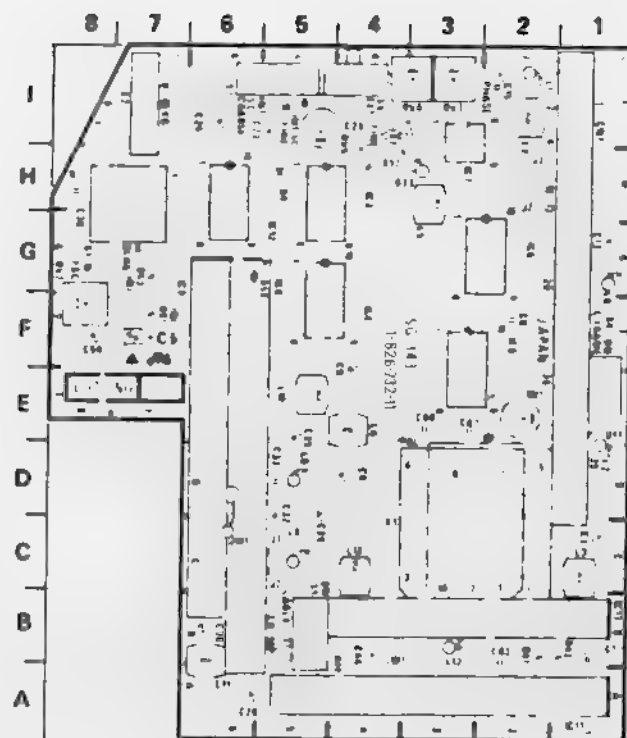
Ser. No. 10001-10290 (UC)
30001-30160 (J)
40001-40200 (EK)

SG-143/143P

SG-143/143P

SG-143/143P 1 676 732 11

CN1 I-1 Q1 B-2
D1 E-3 Q2 C-2
D2 G-6 Q3 C-1
D3 G-2 Q4 H-1
D4 H-5 Q5 H-5
D5 E-2 Q6 H-3
D6 A-5 Q7 A-3
D7 I-5 9 B-4
D8 G-7
D9 H-7 RV1 E-2
E1 B-5 RV2 G-8
RV3 I-3
RV4 I-3
IC1 C-2 RV5 I-4
IC2 F-3
IC3 H-4 S1 G-8
IC4 F-4 S2 I-7
IC5 G-2 S4 F-1
IC6 F-2 S5 C-5
IC7 H-3 S6 I-4
IC8 G-5 S7 I-6
IC9 G-7
IC10 G-8 X1 C-4
IC11 A-1
IC12 G-5
IC13 B-1
IC14 E-8
IC15 D-1(P)



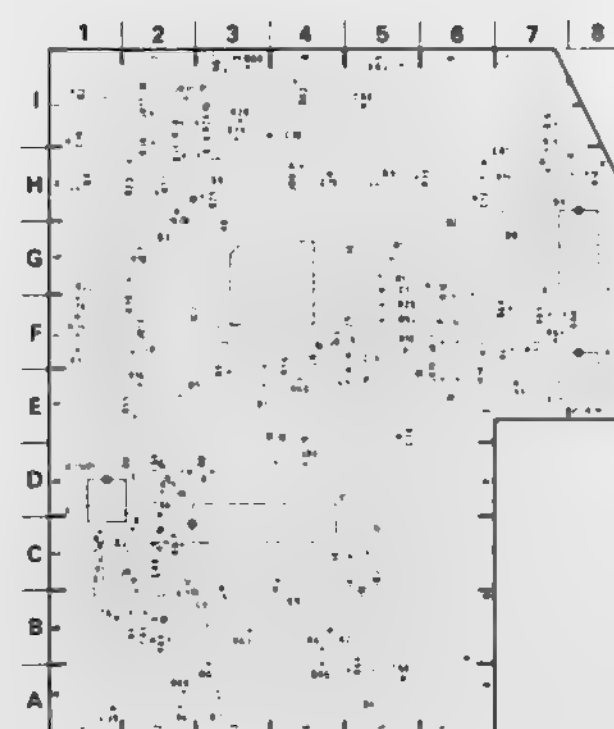
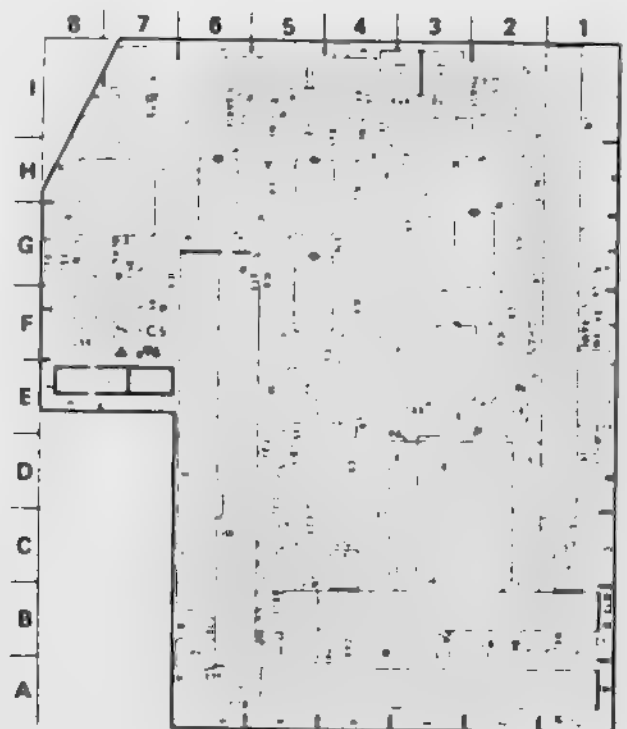
SG-143/143P 1 676 732 11

CN1 I-1 Q1 B-2
D1 E-3 Q2 C-2
D2 G-6 Q3 C-1
D3 G-2 Q4 H-1
D4 H-5 Q5 H-5
D5 E-2 Q6 H-3
D6 A-5 Q7 A-3
D7 I-5 9 B-4
D8 G-7
D9 H-7 RV1 E-2
E1 B-5 RV2 G-8
RV3 I-3
RV4 I-3
IC1 C-2 RV5 I-4
IC2 F-3
IC3 H-4 S1 G-8
IC4 F-4 S2 I-7
IC5 G-2 S4 F-1
IC6 F-2 S5 C-5
IC7 H-3 S6 I-4
IC8 G-5 S7 I-6
IC9 G-7
IC10 G-8 X1 C-4
IC11 A-1
IC12 G-5
IC13 B-1
IC14 E-8
IC15 D-1(P)

Ser. No. 10291-
30161-
40201-
10001-
30001-
40001-
BVP-7 (UC)
BVP-7 (J)
BVP-7P (EK)
BVP-7000HS (UC)
BVP-7000HS (J)
BVP-7000HSP (EK)

SG-143/143P 1 676 732 11

CN1 I-1 Q1 B-2
D1 E-3 Q2 C-2
D2 G-6 Q3 C-1
D3 G-2 Q4 H-1
D4 H-5 Q5 H-5
D5 E-2 Q6 H-3
D6 A-5 Q7 A-3
D7 I-5 9 B-4
D8 G-7
D9 H-7 RV1 E-2
D10 F-5 RV2 G-8
RV3 I-3
E1 B-5 RV4 I-3
RV5 I-4
IC1 C-2
IC2 F-3 S1 G-8
IC3 H-4 S2 I-7
IC4 F-4 S4 F-1
IC5 G-2 S5 C-5
IC6 F-2 S6 I-4
IC7 H-3 S7 I-6
IC8 G-5
IC9 G-7 X1 C-4
IC10 G-8
IC11 A-1
IC12 G-5
IC13 B-1
IC14 E-8
IC15 D-1(P)

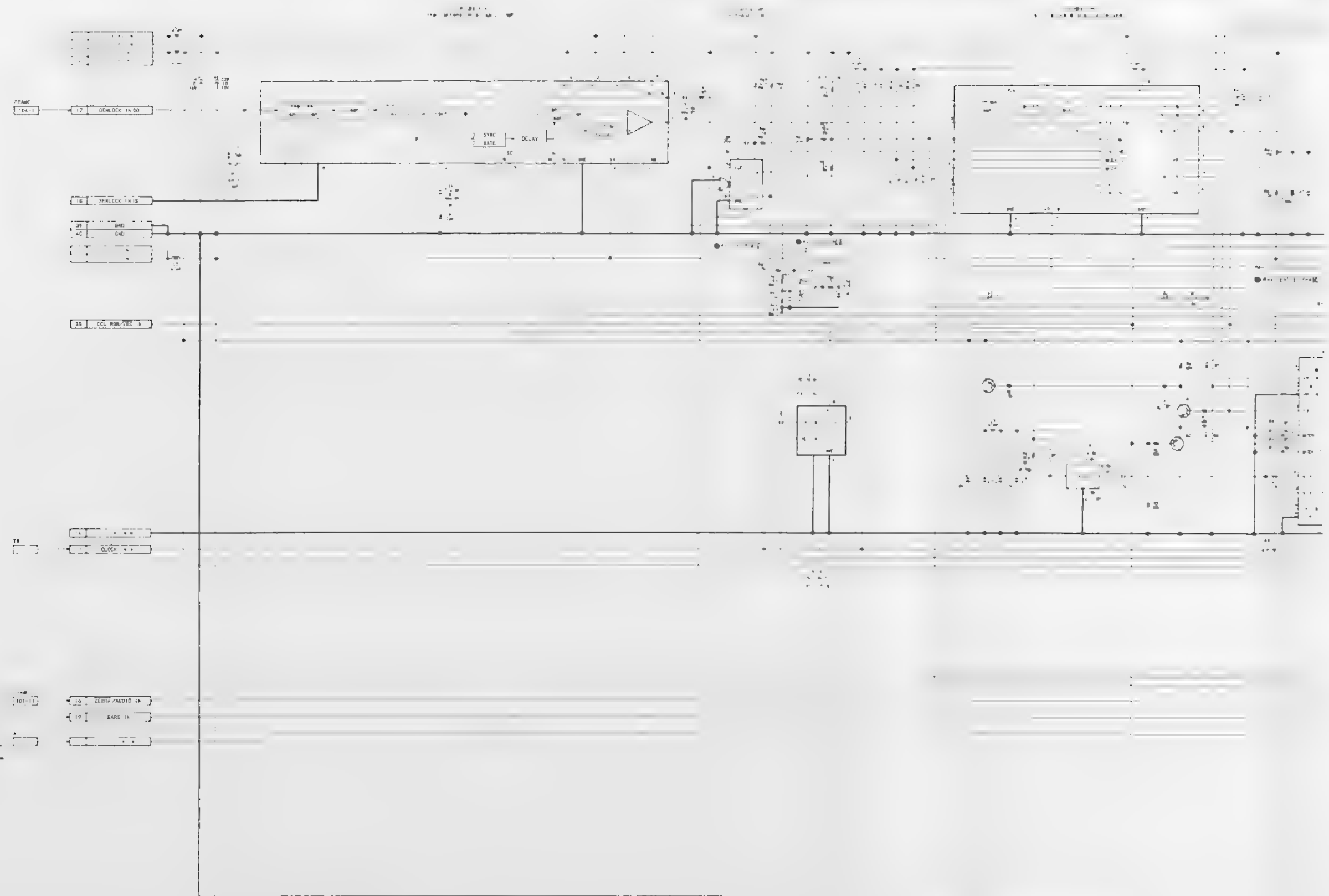
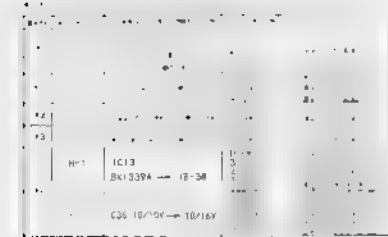


SG-143/143P 1 676 732 11

CN1 I-1 Q1 B-2
D1 E-3 Q2 C-2
D2 G-6 Q3 C-1
D3 G-2 Q4 H-1
D4 H-5 Q5 H-5
D5 E-2 Q6 H-3
D6 A-5 Q7 A-3
D7 I-5 9 B-4
D8 G-7
D9 H-7 RV1 E-2
D10 F-5 RV2 G-8
RV3 I-3
E1 B-5 RV4 I-3
RV5 I-4
IC1 C-2
IC2 F-3 S1 G-8
IC3 H-4 S2 I-7
IC4 F-4 S4 F-1
IC5 G-2 S5 C-5
IC6 F-2 S6 I-4
IC7 H-3 S7 I-6
IC8 G-5
IC9 G-7 X1 C-4
IC10 G-8
IC11 A-1
IC12 G-5
IC13 B-1
IC14 E-8
IC15 D-1(P)

BVP-7 (J) 1-R6
BVP-7 (UC) 1-R6
BVP-7P (EK) 1-R5
BVP-7000HS (J) 1-R1
BVP-7000HS (UC) 1ST
BVP-7000HSP (EK) 1ST

SG-143/143P BOARD SYNC GENERATOR



00HS (J) 1-R2
000HS (UC) 1ST
BVP-7000HSP (EK) 1ST

C-45

C-48

A

B

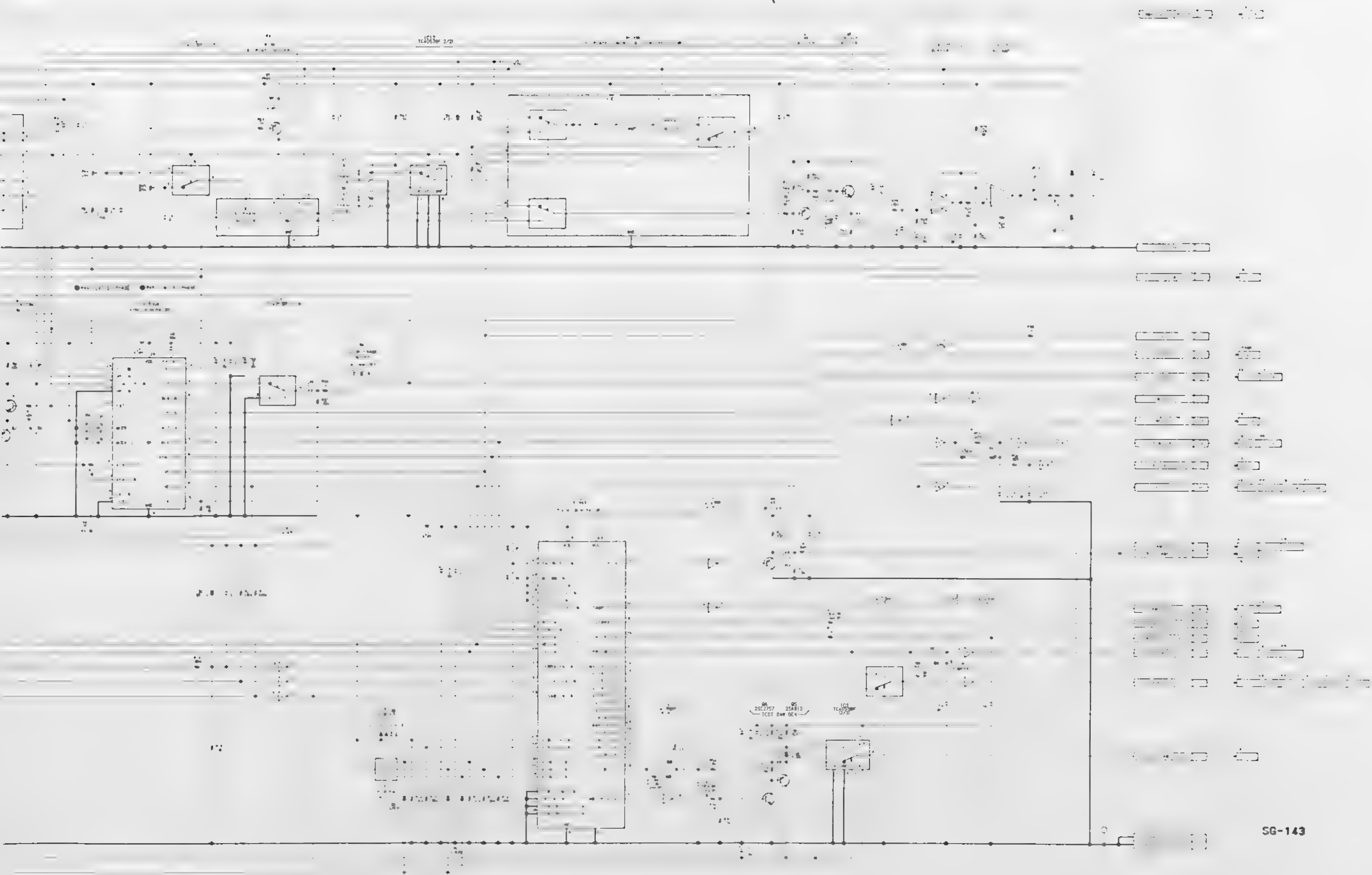
C

D

E

F

G



1

2

3

4

5

6

G

H

I

J

K

L

M

C-47

C-48

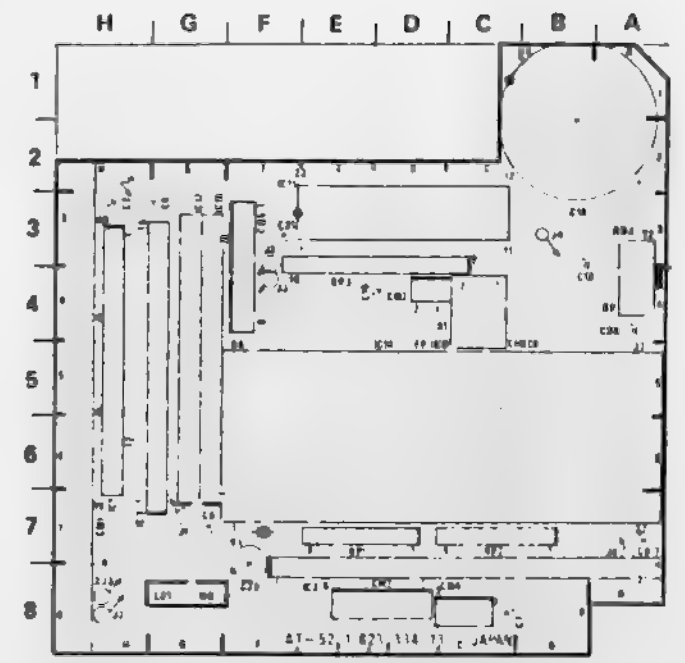
E-BVP7-SG1-3MSS

Ser.No. 10001-11220 BVP-7 (UC)
 30001-30650 BVP-7 (J)
 40001-42025 BVP-7P (EK)
 30001-30025 BVP-7000HS (J)

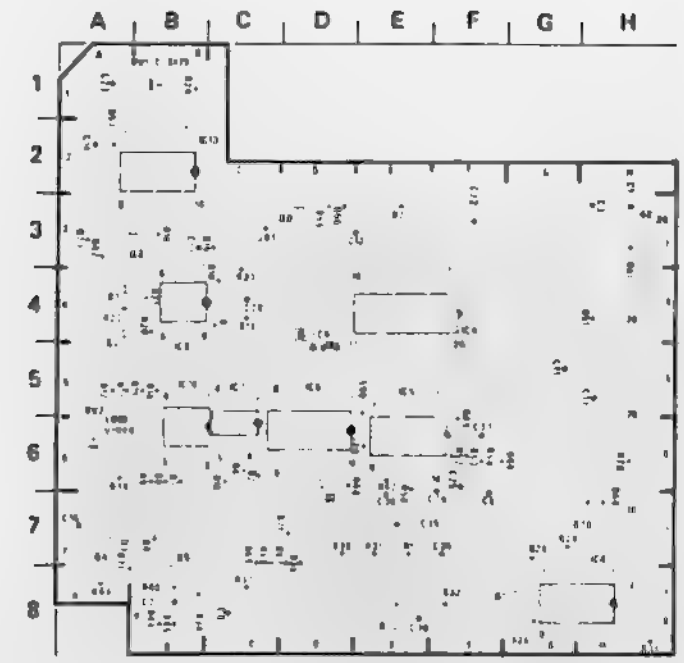
AT-52A AT-52A

AT-52A 1 623 334-13

- CN1 H-5
- CN2 D-4
- CN3 D-8
- CN4 C-8
- CN5 F-3
- D1 G-8
- D2 D-6
- D3 B-7
- IC1 H-5
- IC2 C-8
- IC3 G-5
- IC4 H-8
- IC5 E-6
- IC6 D-6
- IC7 C-6
- IC8 B-4
- IC9 E-4
- IC10 B-6
- IC11 D-3
- IC12 G-5
- IC13 B-2
- IC14 C-6
- IC15 G-5
- Q1 A-4
- Q2 A-4
- Q3 B-3
- Q4 A-7
- Q5 B-8
- Q6 D-3
- RP1 E-7
- RP2 C-7
- RV1 B-1
- RV2 A-6
- S1 C-4
- S2 A-4
- X1 F-7



C-51 (a)



AT-52A 1 623 334-13

- CN1 H-5
- CN2 D-4
- CN3 D-8
- CN4 C-8
- CN5 F-3
- D1 G-8
- D2 D-6
- D3 B-7
- IC1 H-5
- IC2 C-8
- IC3 G-5
- IC4 H-8
- IC5 E-6
- IC6 D-6
- IC7 C-6
- IC8 B-4
- IC9 E-4
- IC10 B-6
- IC11 D-3
- IC12 G-5
- IC13 B-2
- IC14 C-6
- IC15 G-5
- Q1 A-4
- Q2 A-4
- Q3 B-3
- Q4 A-7
- Q5 B-8
- Q6 D-3
- RP1 E-7
- RP2 C-7
- RV1 B-1
- RV2 A-6
- S1 C-4
- S2 A-4
- X1 F-7

C-52 (a)

BVP-7 (J) 1-A7
 BVP-7 (UC) 1-A7
 BVP-7P (EK) 1-A6
 BVP-7000HS (J) 1-A2
 BVP-7000HS (UC) 1ST
 BVP-7000HSP (EK) 1ST

Ser. No. 11221-	BVP-7 (UC)
30651-	BVP-7 (J)
42026-	BVP-7P (EK)
10001-	BVP-7000HS (UC)
30026-	BVP-7000HS (J)
40001-	BVP-7000HSP (EK)

AT-52A

AT-52A

AT-52A 1-623-334-14

CN1 H-5
CN2 D-4
CN3 D-8
CN4 C-8
CN5 F-3

D1 G-8
D2 D-6
D3 B-7

IC1 H-5
IC2 C-8
IC3 G-5
IC4 H-8
IC5 E-6
IC6 D-6
IC7 C-6
IC8 B-4
IC9 E-4
IC10 B-6
IC11 D-3
IC12 G-5
IC13 B-2
IC14 C-6
IC15 G-5

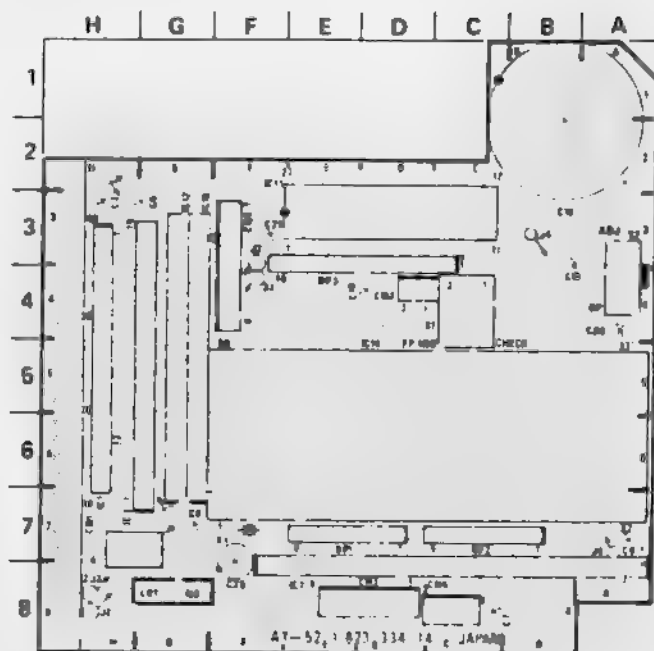
Q1 A-4
Q2 A-4
Q3 B-3
Q4 A-7
Q5 B-8
Q6 D-3

RP1 E-7
RP2 C-7

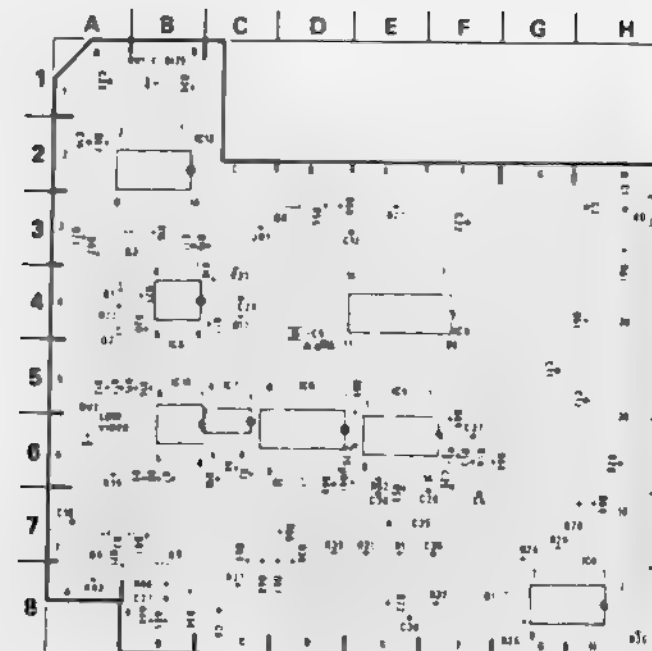
RV1 B-1
RV2 A-6

S1 C-4
S2 A-4

X1 F-7



C-51 (b)



AT-52A 1-623-334-14

CN1 H-5
CN2 D-4
CN3 D-8
CN4 C-8
CN5 F-3

D1 G-8
D2 D-6
D3 B-7

IC1 H-5
IC2 C-8
IC3 G-5
IC4 H-8
IC5 E-6
IC6 D-6
IC7 C-6
IC8 B-4
IC9 E-4
IC10 B-6
IC11 D-3
IC12 G-5
IC13 B-2
IC14 C-6
IC15 G-5

Q1 A-4
Q2 A-4
Q3 B-3
Q4 A-7
Q5 B-8
Q6 D-3

RP1 E-7
RP2 C-7

RV1 B-1
RV2 A-6

S1 C-4
S2 A-4

X1 F-7

C-52 (b)

BVP-7 (J) 1-A7
BVP-7 (UC) 1-A7
BVP-7P (EK) 1-A6
BVP-7000HS (J) 1-A2
BVP-7000HS (UC) 1ST
BVP-7000HSP (EK) 1ST

AT-52A BOARD
 AUTO WH TEBALAN
 AUTO BLACK BALANC
 AUTO CENTERING
 AUTO IRIS
 CHARACTER GENERATOR

AT-52A

AT-52A

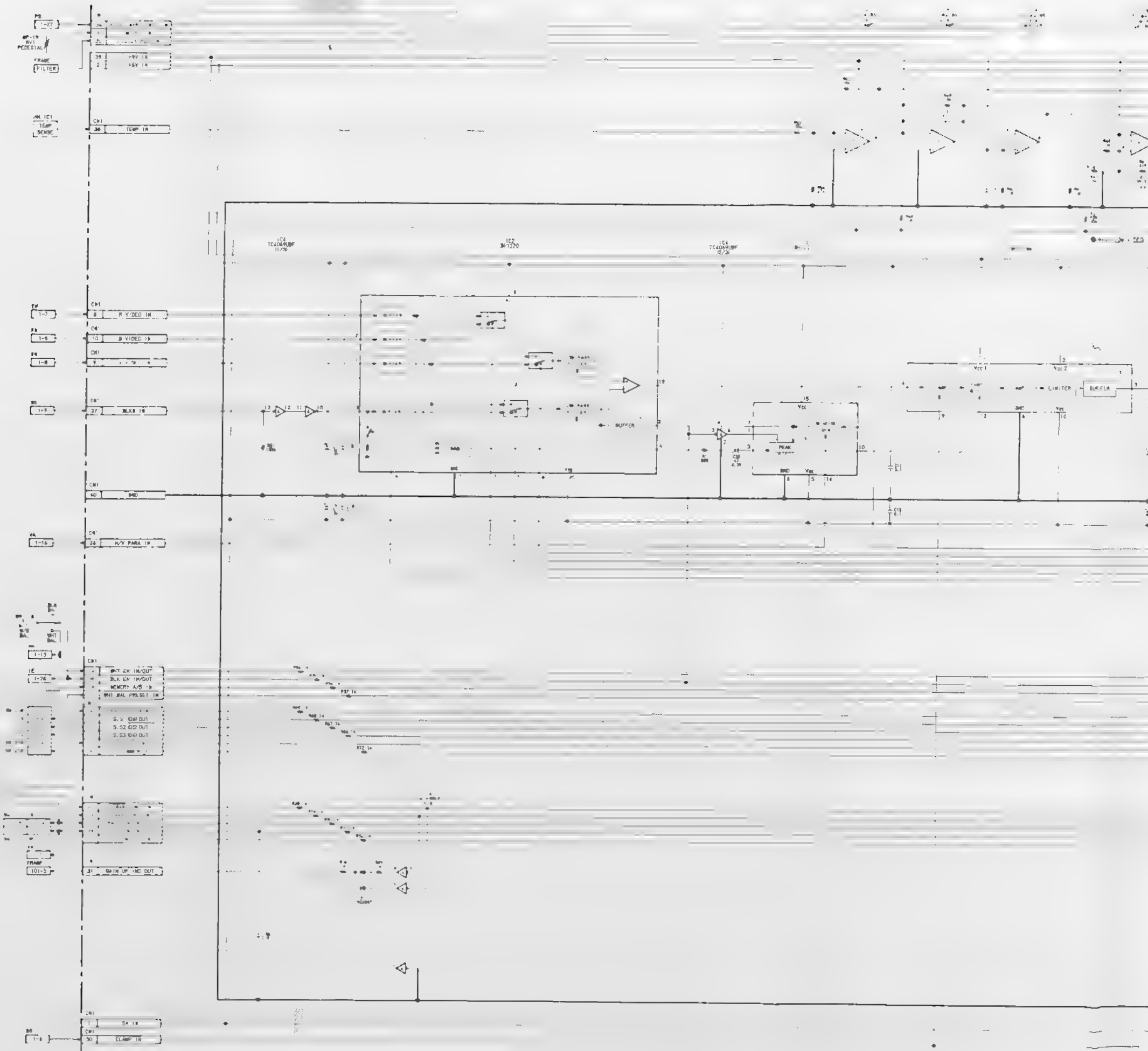
NOTE

#1	G-2	C39 0.1 ADD	10751- BVP-7 (UC)
			30471- BVP-7 (U)
			410- BVP-7P (EK)
			10001- BVP-7000HS (UC)
			30016- BVP-7000HS
	G-2	R39 10K → 30K	111- BVP-7 (UC)
			30651- (U)
#2			11371- BVP-7 (UC)
			306- (U)
			420- (U) P (EK)
	G-1	RV2 5K → 2K	0006- BVP-7000H (UC)
			30025- BVP-7000HS (U)

BVP-7 (U) 1-R7
 BVP-7 (UC) 1-R7
 BVP-7P (EK) 1-R6
 BVP-7000HS (U) 1-R2
 BVP-7000HS (UC) 1ST
 BVP-7000HSP (EK) 1ST

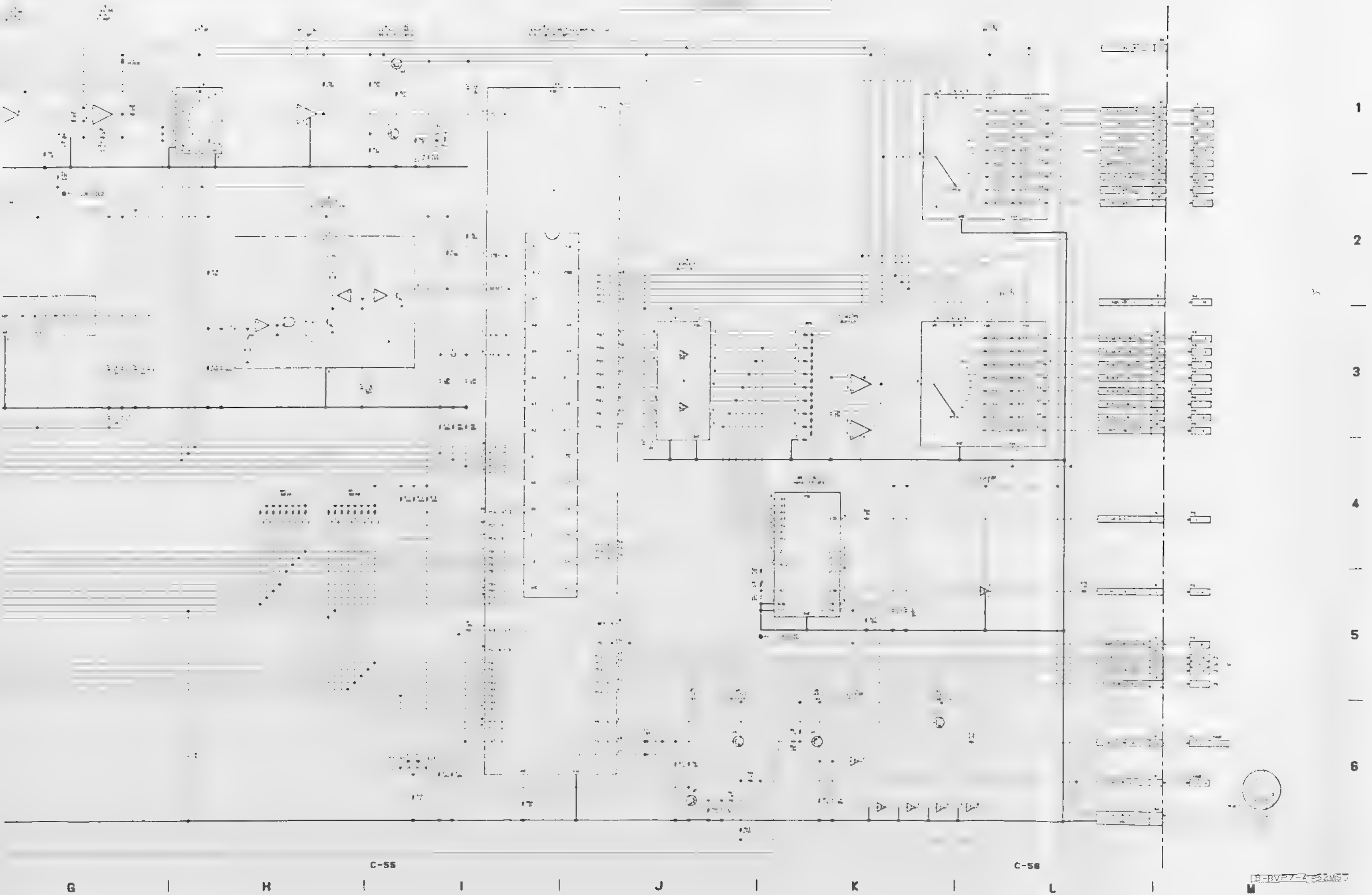
C-53

C-54



AT-52A

AT-52A



1

2

3

4

5

6

G

H

I

J

K

L

M

C-55

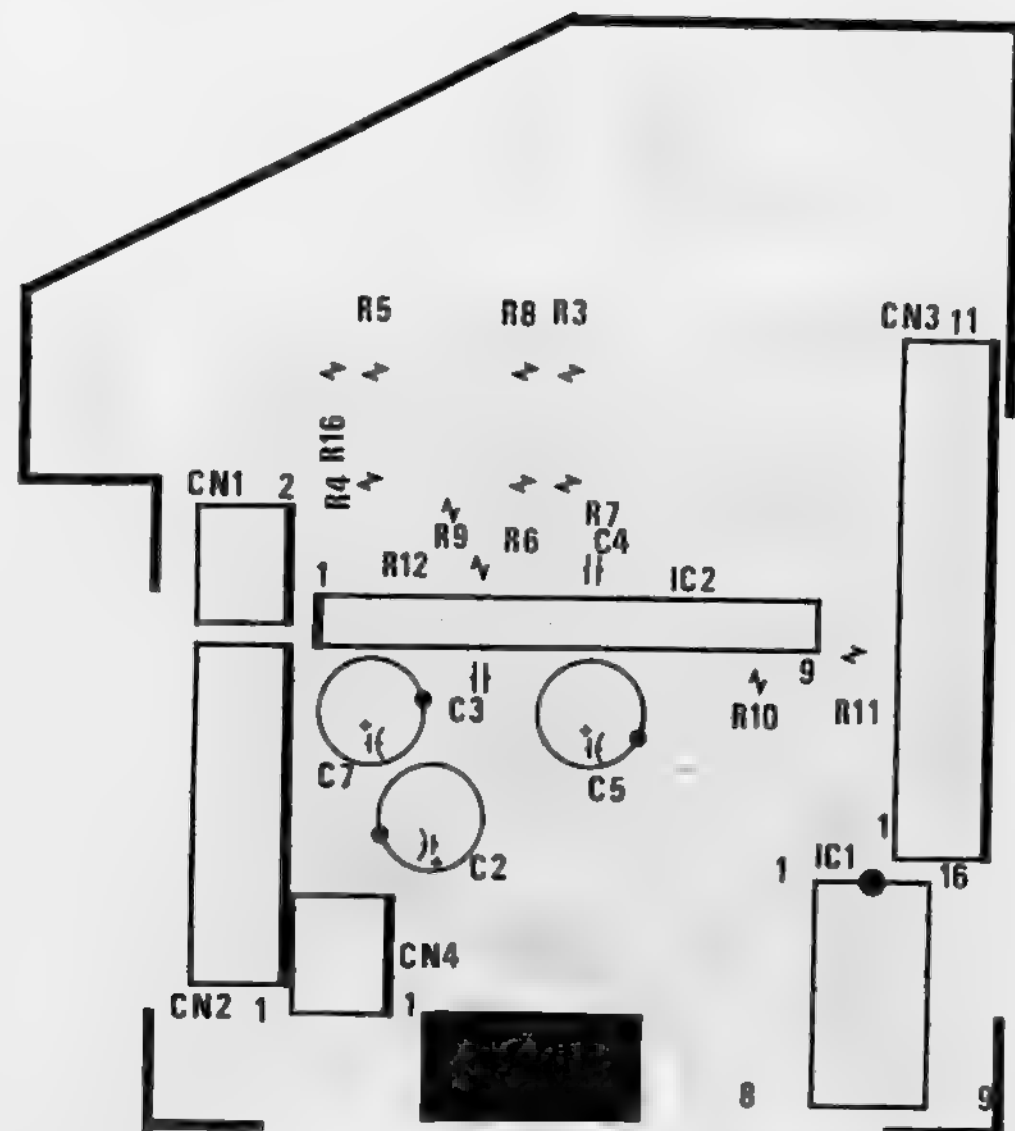
C-58

DB-BVP7-A-52M5

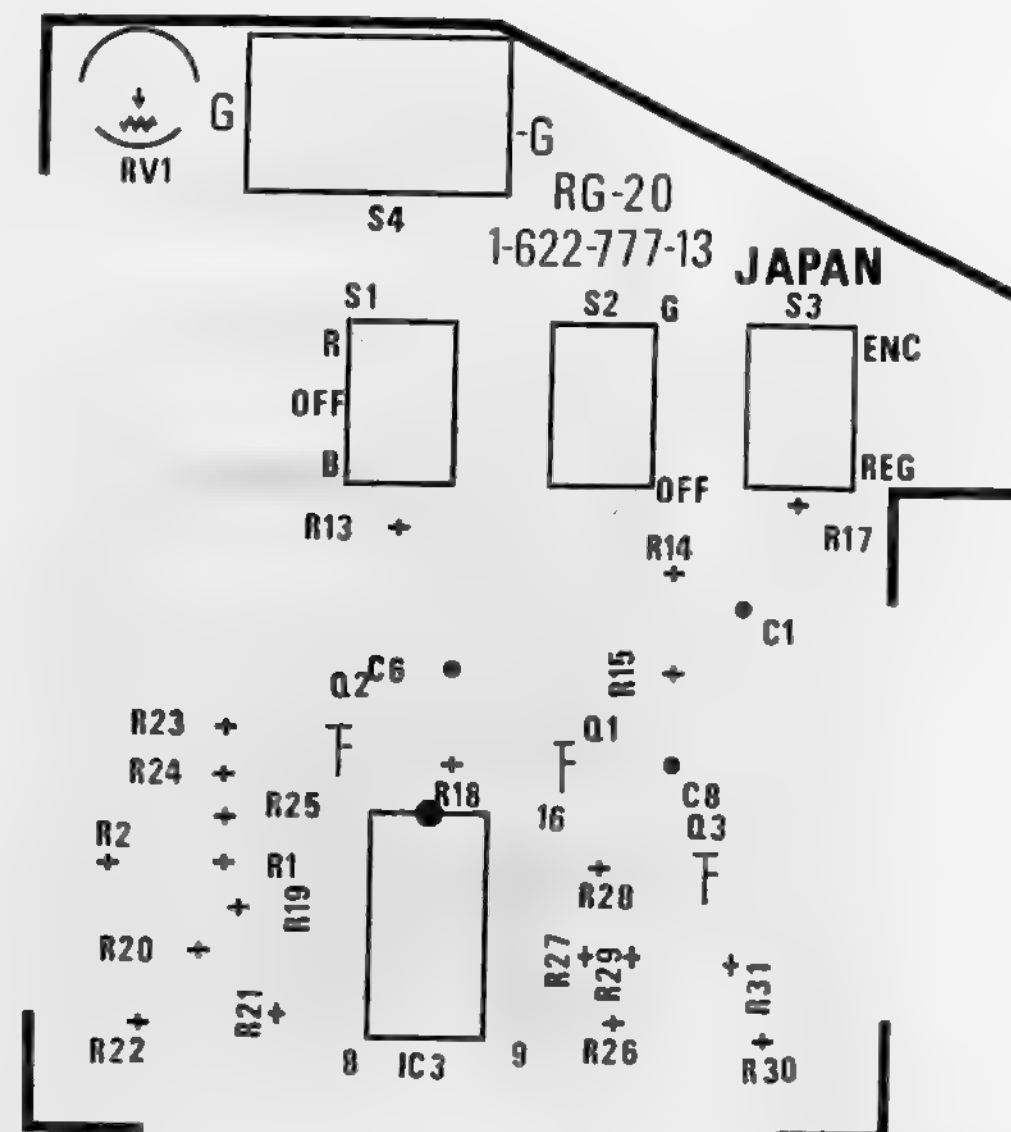
Ser. No. 10001-10880 (UC)
 30001-30570 (J)
 40001-41760 (EK)

RG-20/20P

RG-20/20P



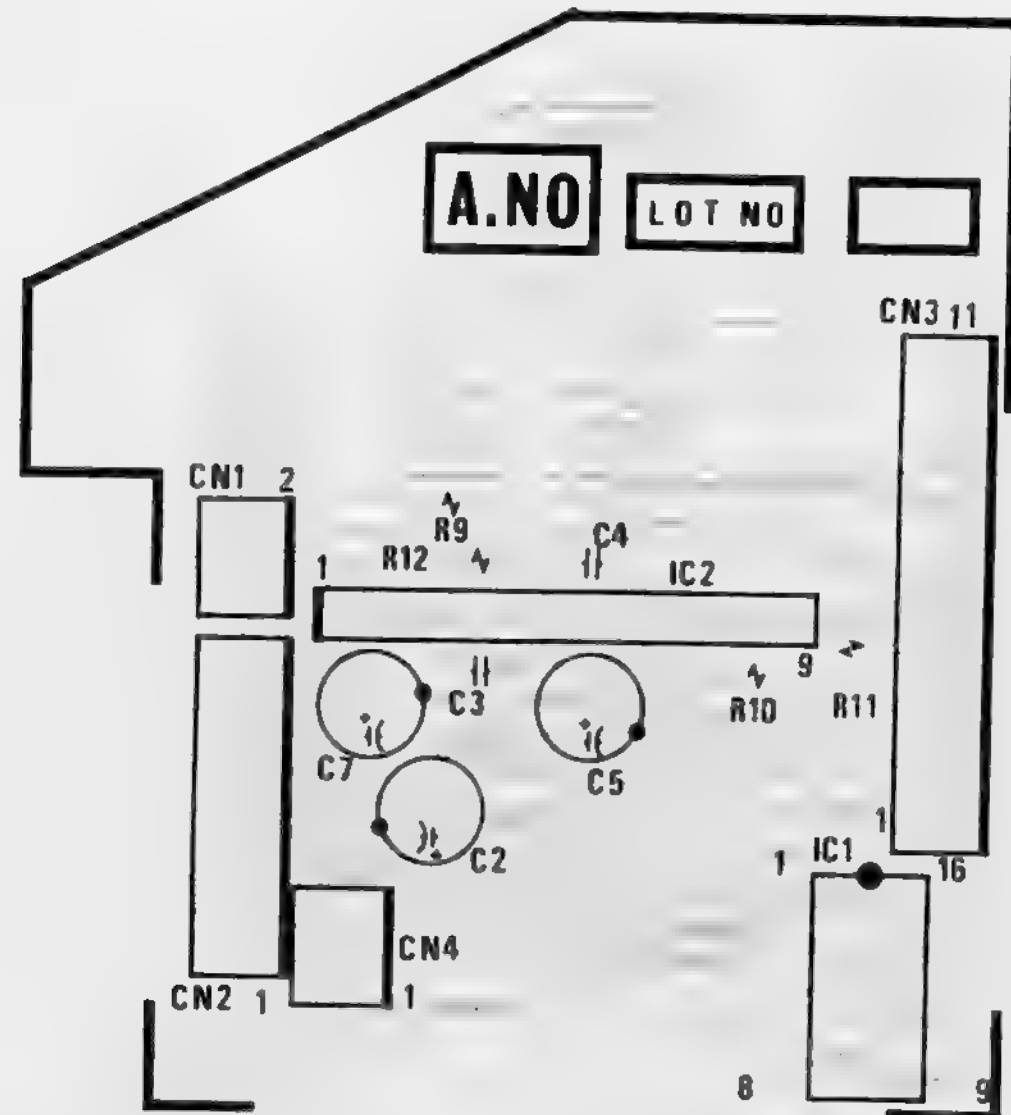
C-59 (a)



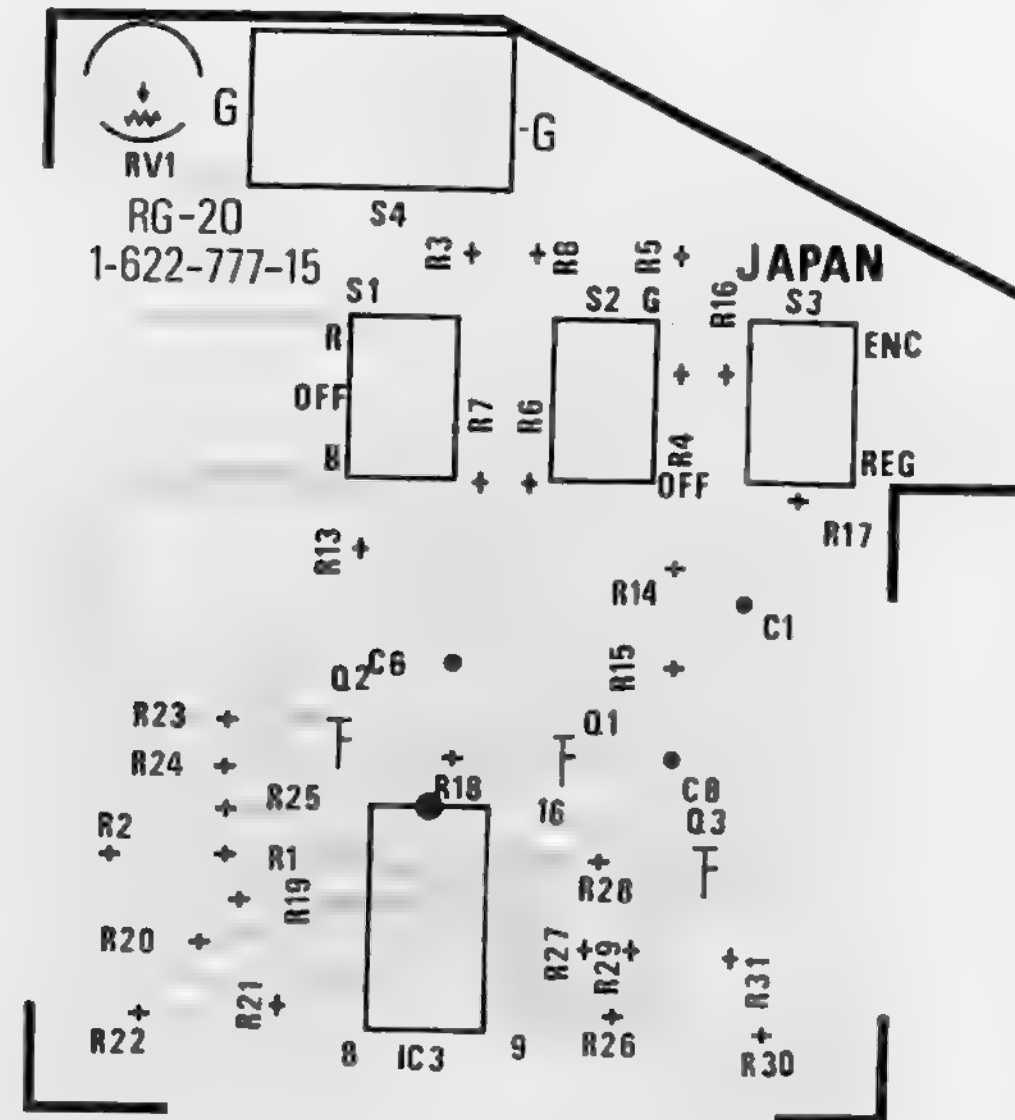
C-60 (a)

BVP-7 (J) 1-A6
 BVP-7 (UC) 1-A6
 BVP-7P (EK) 1-A5

Ser.No. 10881-11370 (UC)
30571-30650 (J)
41761-42075 (EK)



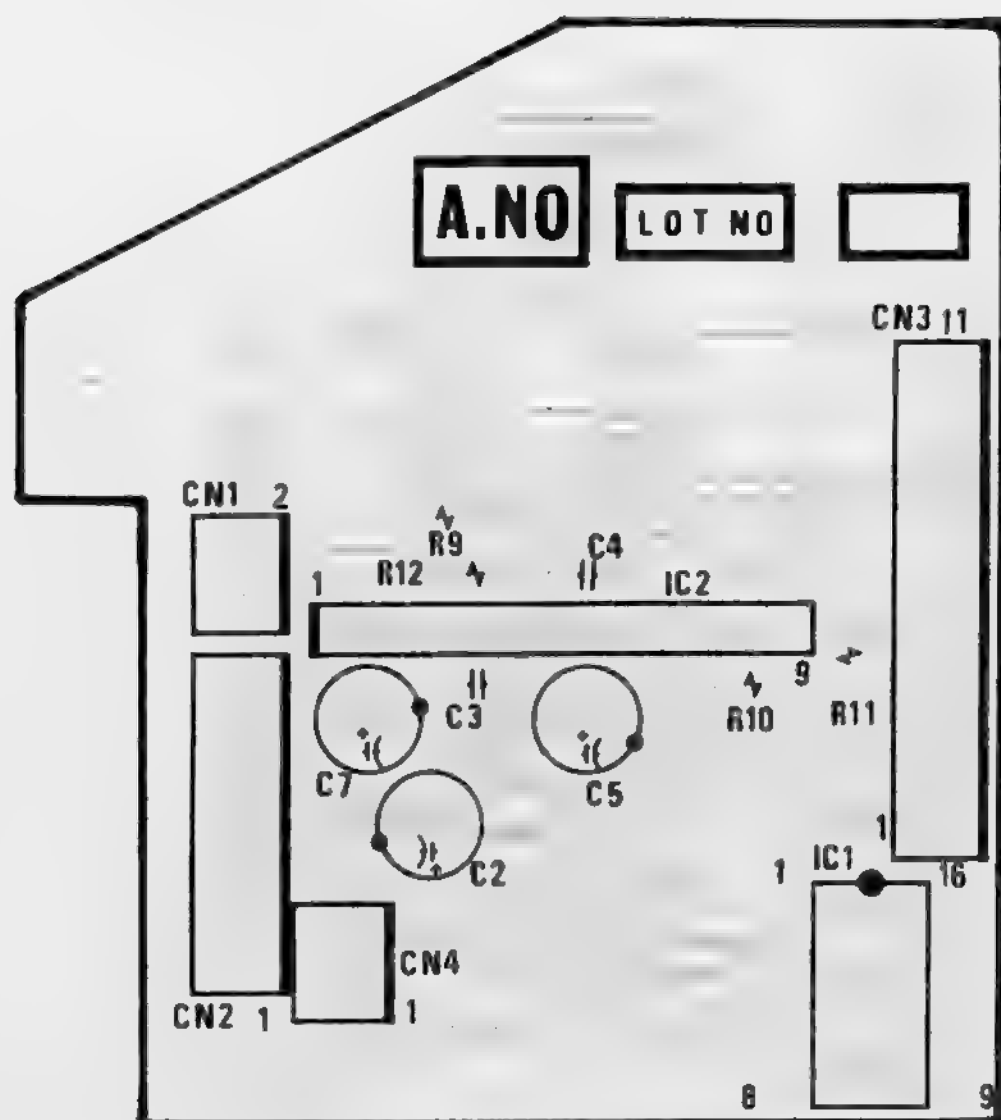
C-59 (b)



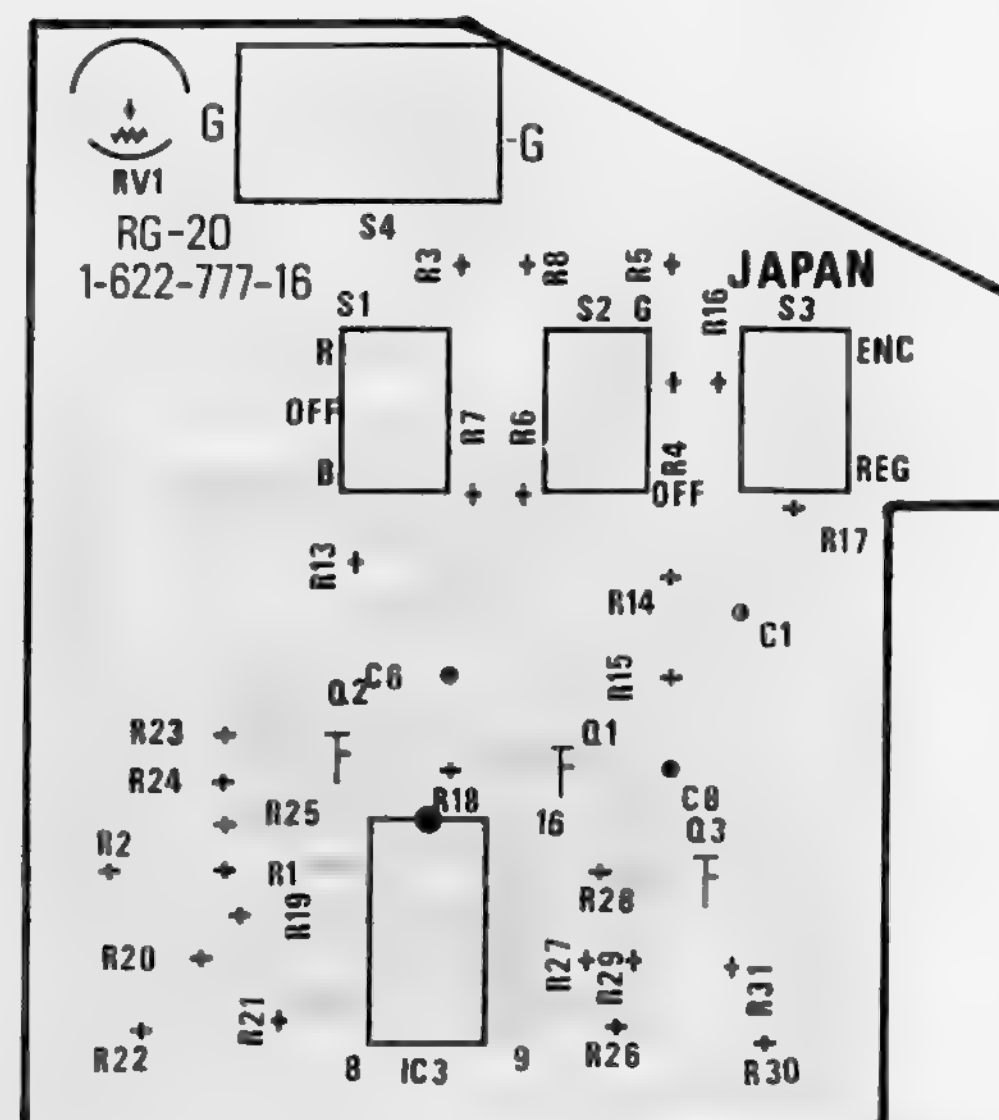
C-60 (b)

BVP-7 (J) 1-A6
BVP-7 (UC) 1-A6
BVP-7P (EK) 1-A5

Ser. No. 11371- (UC)
30651- (J)
42076- (EK)



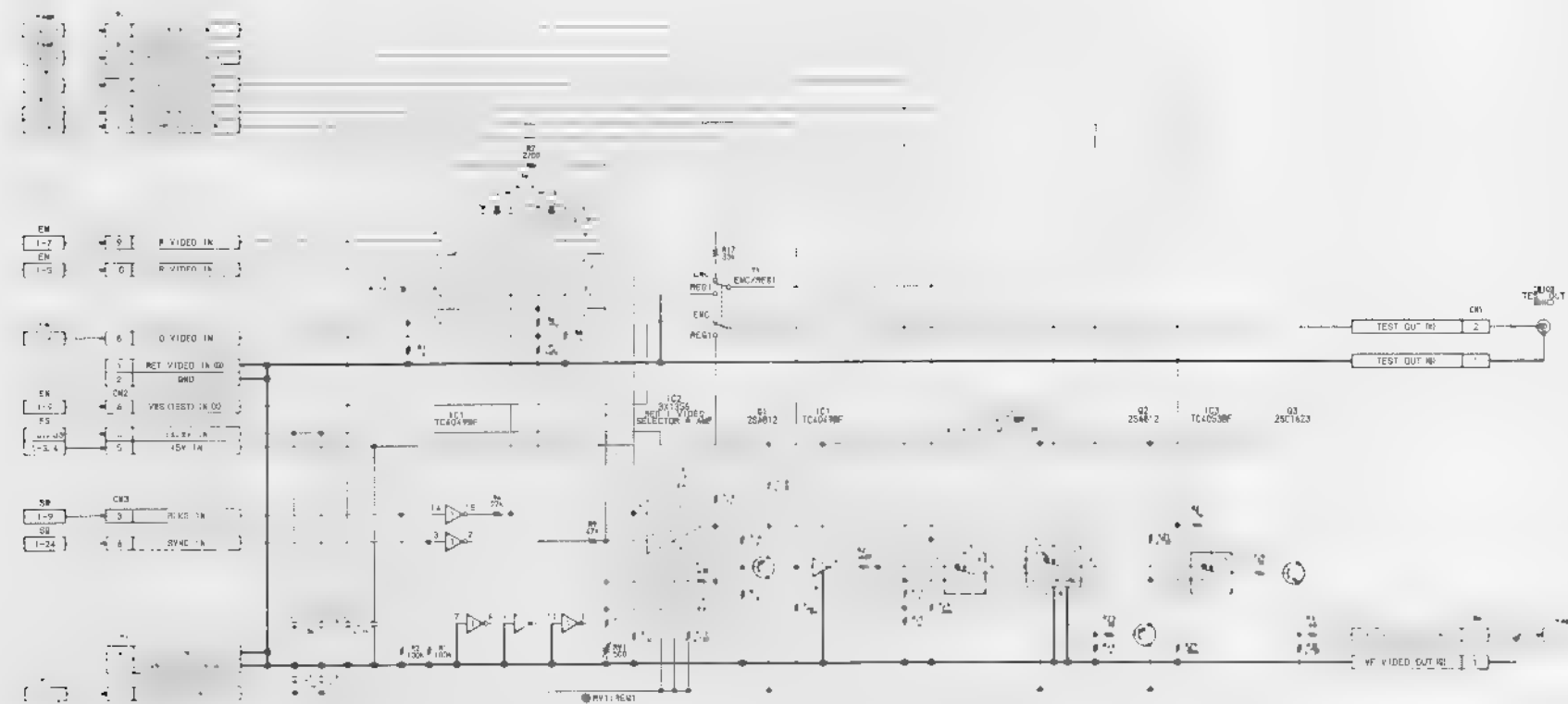
C-59 (c)



C-60 (c)

BVP-7 (J) 1-A5
BVP-7 (UC) 1-A5
BVP-7P (EK) 1-A5

RG-20/20P BOARD

REGI SEL OR
VF VIDEO

C-61

C-62

A

B

C

D

E

F

1

2

3

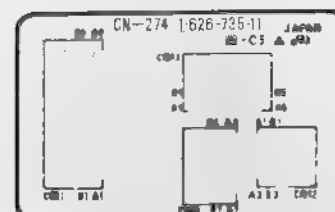
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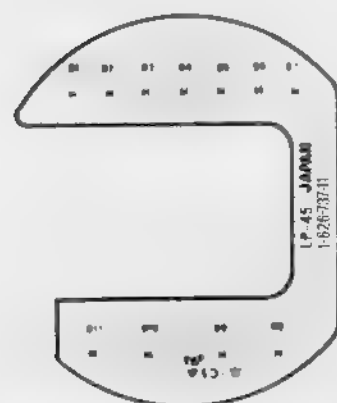
6

Ser. No. 10001-10210 (UC)
 30001-30130 (J)
 40001-40130 (EK)

CN-274 BOARD



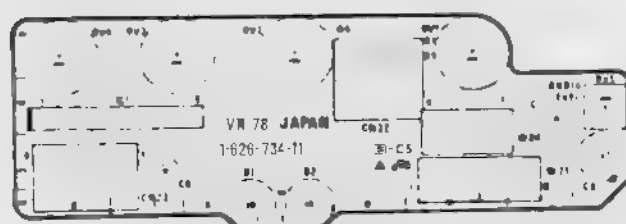
LP-45 BOARD



SW-300 BOARD

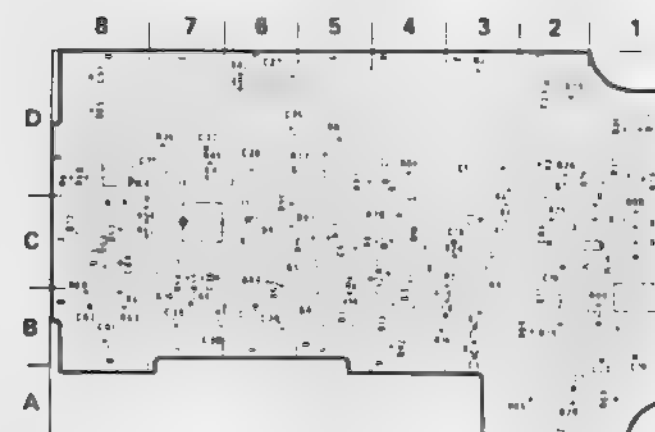


VR-78 BOARD



C-63 (a)

VF-39 BOARD



C-64 (a)

VF-39	1	2	3	4	5	6	7	8
CN1	D-7	RV1	C-3					
CN2	D4	RV2	D-3					
CN4	D8	RV3	D-7					
CN5	D3	RV4	C-6					
		RV5	C-7					
CV1	B-4	RV6	D-8					
		RV7	C-9					
D1	B-4	RV8	B-5					
D2	B-5	RV9	D-5					
D3	C-3							
D5	D1	T1	D-1					
D6	A2							
D7	B-5	TP1	D-8					
D8	D-6	TP2	D-2					
D9	C-6	TP3	D-8					
D10	C-8	TP4	C-5					
D11	B-2							
D12	C-8							
DL1	C-4							
EL	D-5							
IC1	C-6							
IC2	C-1							
IC3	C-2							
IC4	D-8							
Q1	D-2							
Q2	C-4							
Q3	B-4							
Q4	B-5							
Q5	C-6							
Q6	C-3							
Q7	D-4							
Q8	C-3							
Q9	A-3							
Q10	C-3							
Q11	D-5							
Q12	C-7							
Q13	C-8							
Q14	B-7							
Q15	C-8							
Q16	D-2							

BVP-7 (J) 1-R6
 BVP-7 (UC) 1-R6
 BVP-7P (EK) 1-R5

CN-274, LP-45, SW-300
VF-39, VR-78

VIEWFINDER

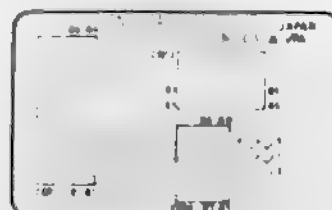
VIEWFINDER

CN-274, LP-45, SW-300
VF-39, VR-78

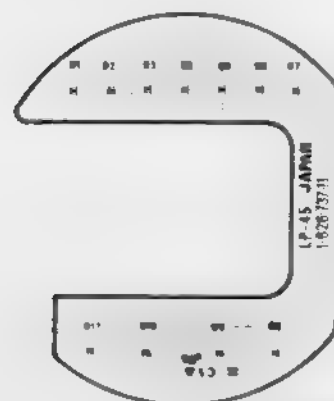
Ser. No. 10211- BVP-7 (UC)
30131- BVP-7 (J)
40131- BVP-7P (EK)
10001- BVP-7000HS (UC)
30001- BVP-7000HS (J)
40001- BVP-7000HSP (EK)

Ser. No. 10211-10360 (UC)
30131-30190 (J)
40131-40250 (EK)

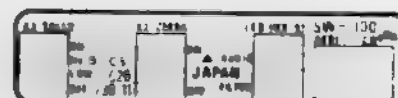
CN-274 BOARD



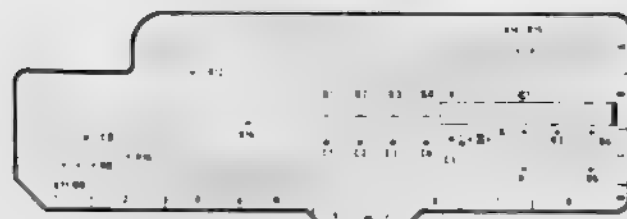
LP-45 BOARD



SW-300 BOARD



VR-78 BOARD



C-63 (b)

VF-39 BOARD



VF-39 1-626-735-12

CN1 D-7 RV1 C-3
CN2 D4 RV2 D-3
CN4 D8 RV3 D-7
CN5 D3 RV4 C-6
RV5 C-7
CV1 B-4 RV6 D-8
RV7 C-8
D1 B-4 RV8 B-5
D2 B-5 RV9 D-5
D3 C-3
D5 D1 T1 D-1
D6 A2
D7 B-5 TP1 D-8
D8 D-6 TP2 D-2
D9 C-6 TP3 D-8
D10 C-8 TP4 C-5
D11 B-2
D12 D-8

DL1 C-4

E1 D-5

IC1 C-6
IC2 C-1
IC3 C-2
IC4 D-8

Q1 D-2
Q2 C-4
Q3 B-4
Q4 B-5
Q5 C-6
Q6 C-3
Q7 D-4
Q8 C-3
Q9 A-3
Q10 C-3
Q11 D-5
Q12 C-7
Q13 C-8
Q14 B-7
Q15 C-8
Q16 D-2
Q17 B-5

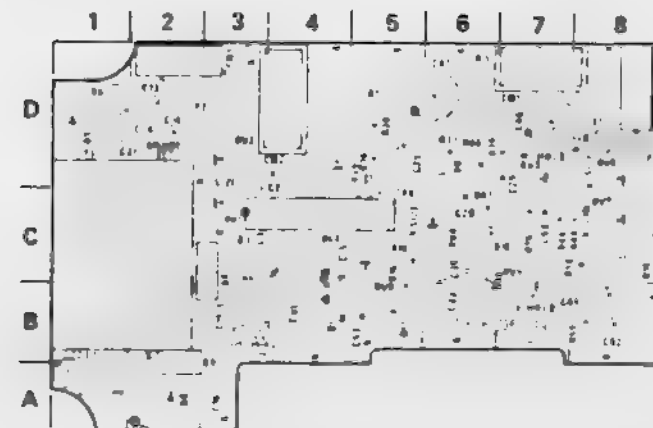
C-64 (b)

BVP-7 (J) 1-R7
BVP-7 (UC) 1-R7
BVP-7P (EK) 1-A6
BVP-7000HS (J) 1-R2
BVP-7000HS (UC) 1ST
BVP-7000HSP (EK) 1ST

Ser.No.10361-11100 BVP-7 (UC)
 30191-30650 BVP-7 (J)
 40251-42025 BVP-7P (EK)
 30001-30020 BVP-7000HS (J)

Ser.No.11101-
 30651- BVP-7 (UC)
 42026- BVP-7 (J)
 10001- BVP-7P (EK)
 30021- BVP-7000HS (UC)
 40001- BVP-7000HS (J)
 BVP-7000HSP (EK)

VF-39 BOARD



VF-39 1-626-736-13,14

CN1 D-7 RV1 C-3
 CN2 D4 RV2 D-3
 CN4 D8 RV3 D-7
 CN5 D3 RV4 C-6
 RV5 C-7
 CV1 B-4 RV6 D-8
 RV7 C-8
 D1 B-4 RV8 B-5
 D2 B-5 RV9 D-5
 D3 C-3
 D5 D1 T1 D-1
 D6 A2
 D7 B-5 TP1 D-8
 D8 D-6 TP2 D-2
 D9 C-6 TP3 D-8
 D10 C-8 TP4 C-5
 D11 B-2
 D12 D-8

DL1 C-4

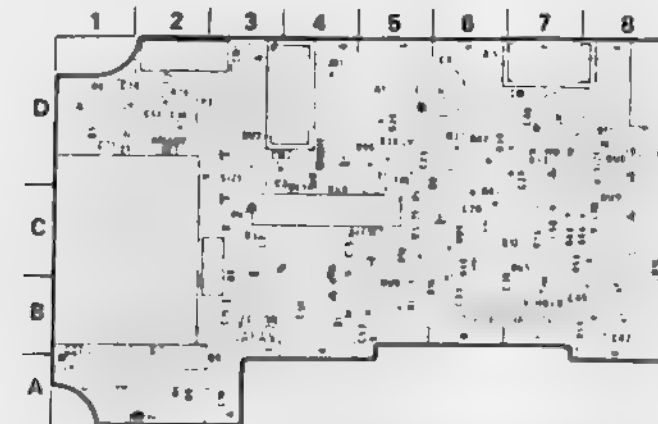
E1 D-5

IC1 C-6
 IC2 C-1
 IC3 C-2
 IC4 D-8

Q1 D-2
 Q2 C-4
 Q3 B-4
 Q4 B-5
 Q5 C-6
 Q6 C-3
 Q7 D-4
 Q8 C-3
 Q9 A-3
 Q10 C-3
 Q11 D-5
 Q12 C-7
 Q13 C-8
 Q14 B-7
 Q15 C-8
 Q16 D-2
 Q17 B-5

C-63 (c)

VF-39 BOARD



VF-39 1-626-736-15,16

CN1 D-7 RV1 C-3
 CN2 D4 RV2 D-3
 CN4 D8 RV3 D-7
 CN5 D3 RV4 C-6
 RV5 C-7
 CV1 B-4 RV6 D-8
 RV7 C-8
 D1 B-4 RV8 B-5
 D2 B-5 RV9 D-5
 D3 C-3
 D5 D1 T1 D-1
 D6 A2
 D7 B-5 TP1 D-8
 D8 D-6 TP2 D-2
 D9 C-6 TP3 D-8
 D10 C-8 TP4 C-5
 D11 B-2
 D12 D-8

DL1 C-4

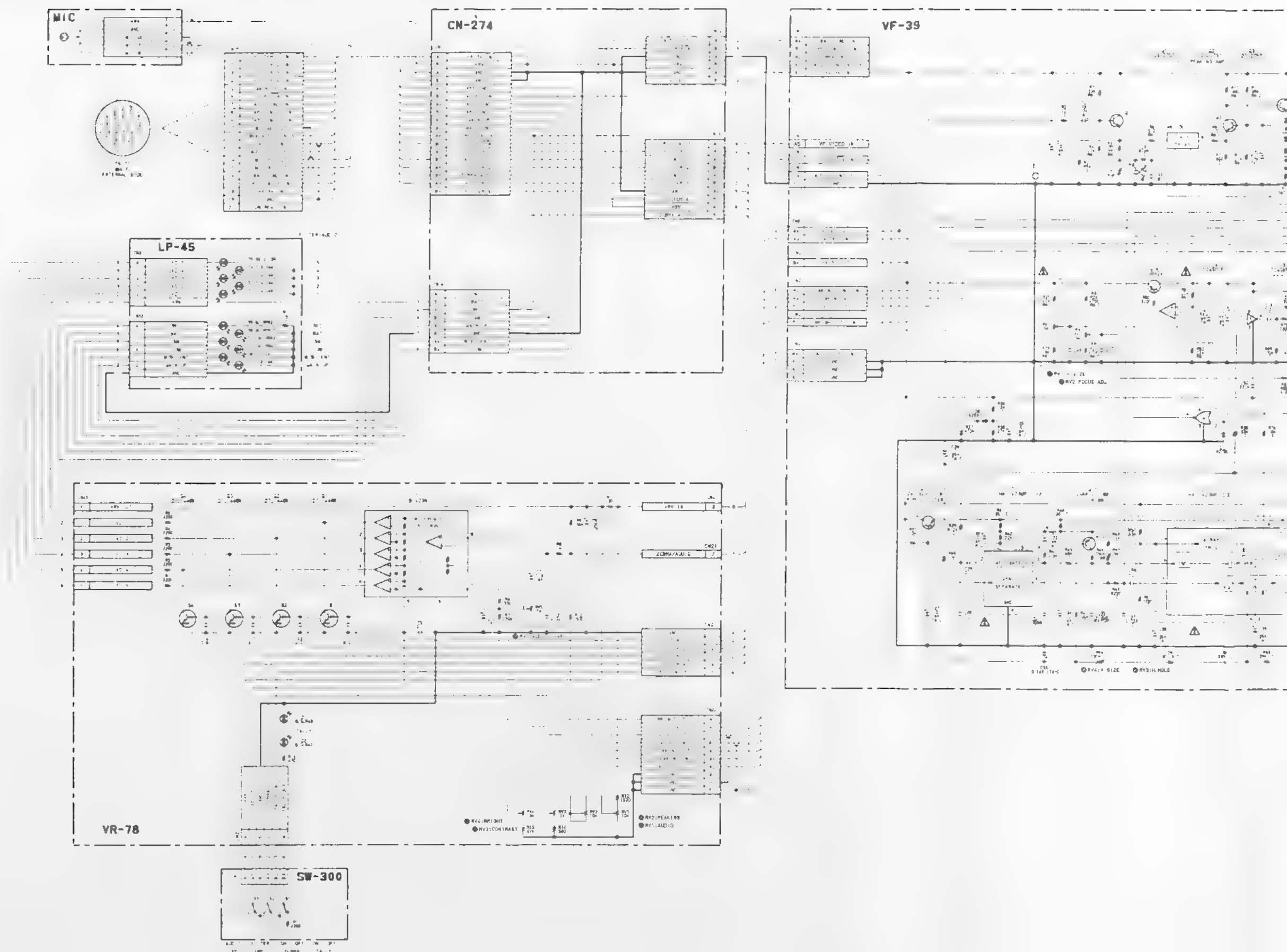
E1 D-5

IC1 C-6
 IC2 C-1
 IC3 C-2
 IC4 D-8

Q1 D-2
 Q2 C-4
 Q3 B-4
 Q4 B-5
 Q5 C-6
 Q6 C-3
 Q7 D-4
 Q8 C-3
 Q9 A-3
 Q10 C-3
 Q11 D-5
 Q12 C-7
 Q13 C-8
 Q14 B-7
 Q15 C-8
 Q16 D-2
 Q17 B-5

C-64 (c)

BVP-7 (J) 1-A7
 BVP-7 (UC) 1-A7
 BVP-7P (EK) 1-A6
 BVP-7000HS (J) 1-A2
 BVP-7000HS (UC) 1ST
 BVP-7000HSP (EK) 1ST

[illegible]

B

C

Q

3

1

Ser. No. 10001-10660 (UC)
30001-30360 (J)
40001-40780 (EK)

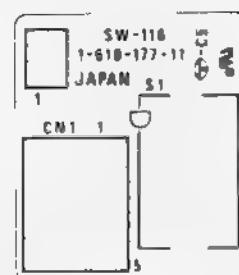
HN-10:

MP-19 BOARD

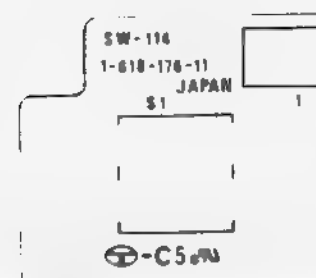


FIG. 21-11 SOLDERING SIDE

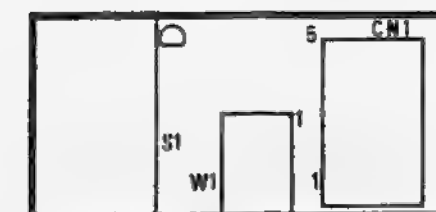
SW-116 BOARD



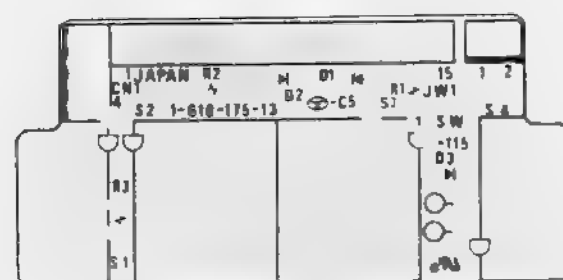
SW-114 BOARD



SW-256 BOARD

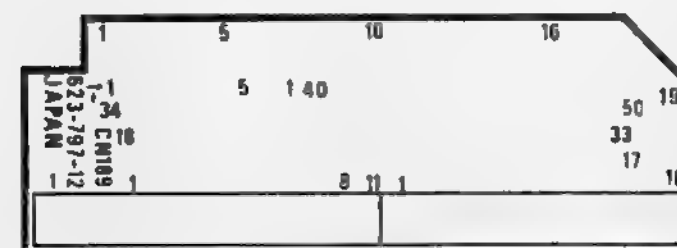


SN-115A BOARD



1 613-175-13 COMPONENT 3.0.0

CN-189 BOARD

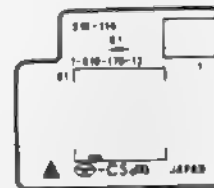


FRAME CN-189, HN-101, SW-114
SW-115A, SW-116, SW-256

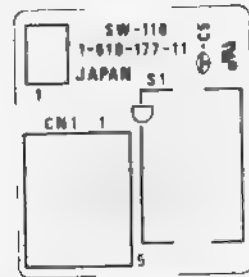
CN-189, HN-101, SW-114
SW-115A, SW-116, SW-256 FRAME FRAME

Ser.No. 10661- (UC)
30361- (J)
40781- (EK)

SW-114 BOARD

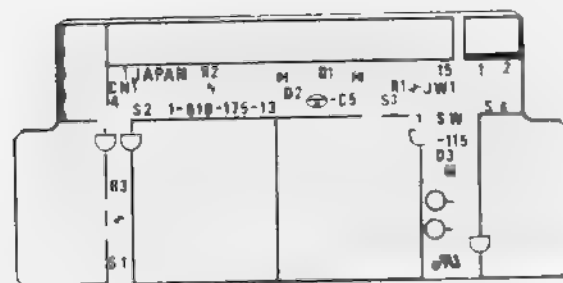


SW-116 BOARD



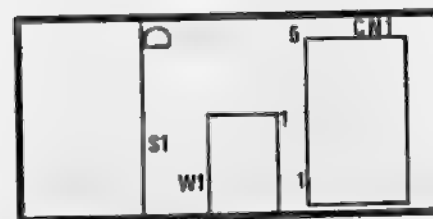
1-818-177-11 COMPONENT SIDE

SW-115A BOARD



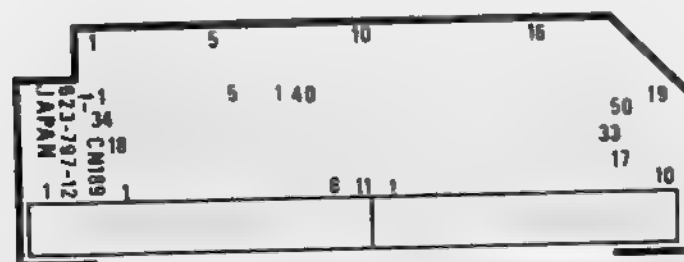
1-818-175-13 COMPONENT SIDE

SW-256 BOARD



1-818-175-13 COMPONENT SIDE

CN-189 BOARD

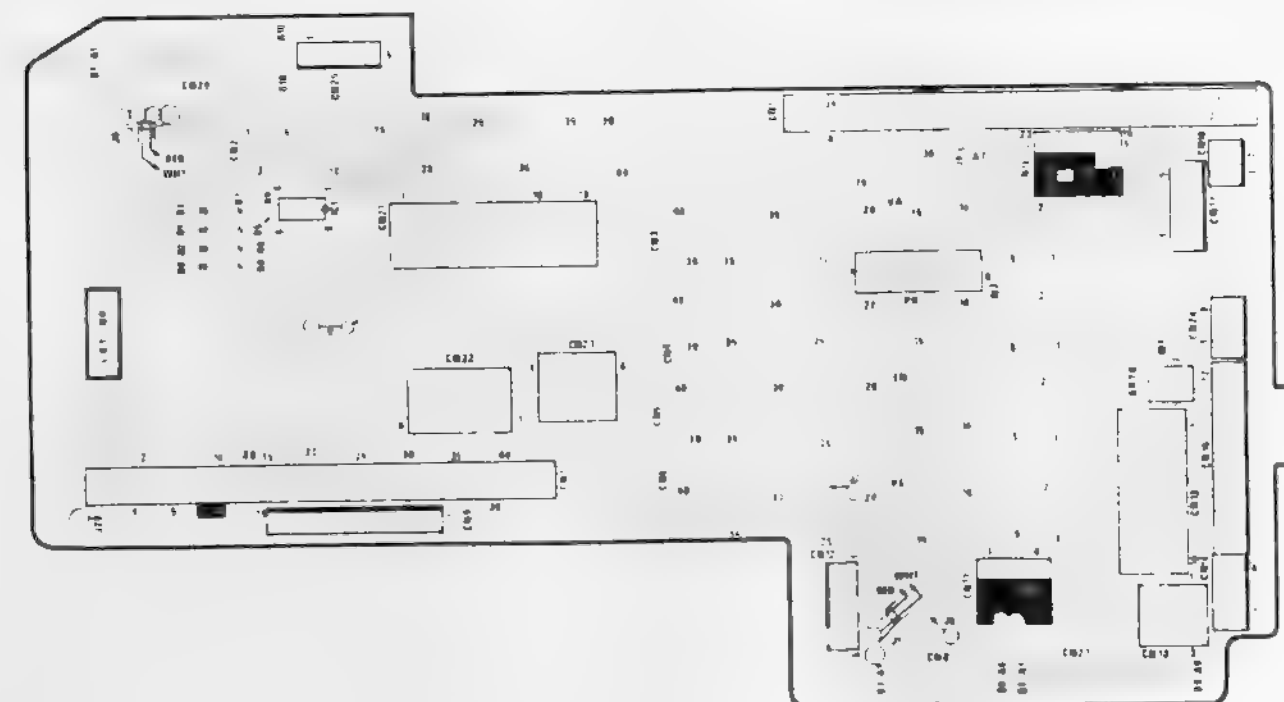
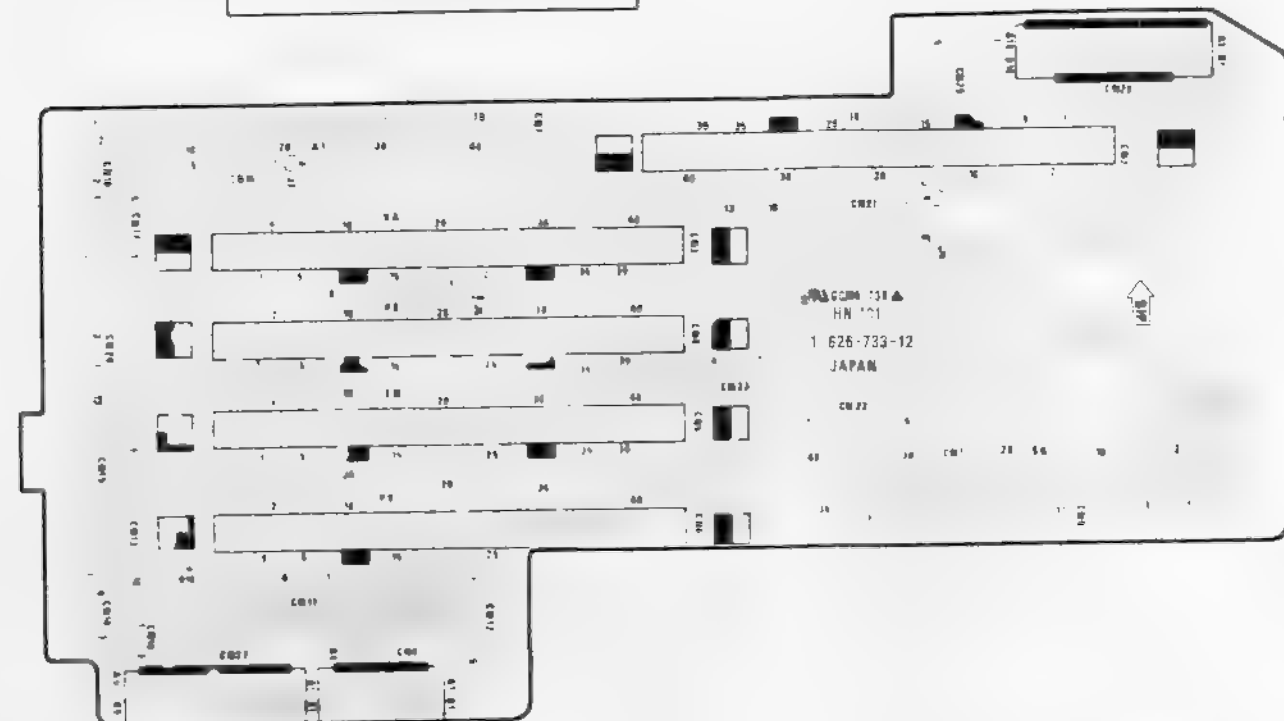


1-823-787-12 COMPONENT SIDE

HN-101 BOARD

Ser.No. 10361-10660 (UC)
30191-30360 (J)
40251-40780 (EK)

HN-10

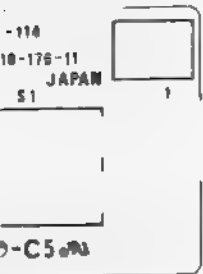


C-69 (b)

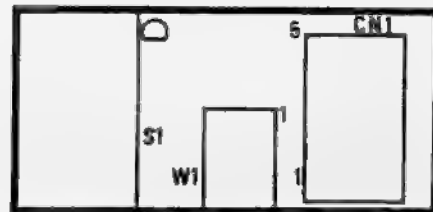
C-68 (b)

01-10660 (UC)
01-30360 (J)
01-40780 (EK)

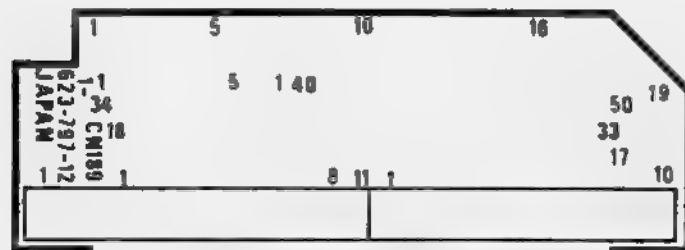
14 BOARD



SW-256 BOARD

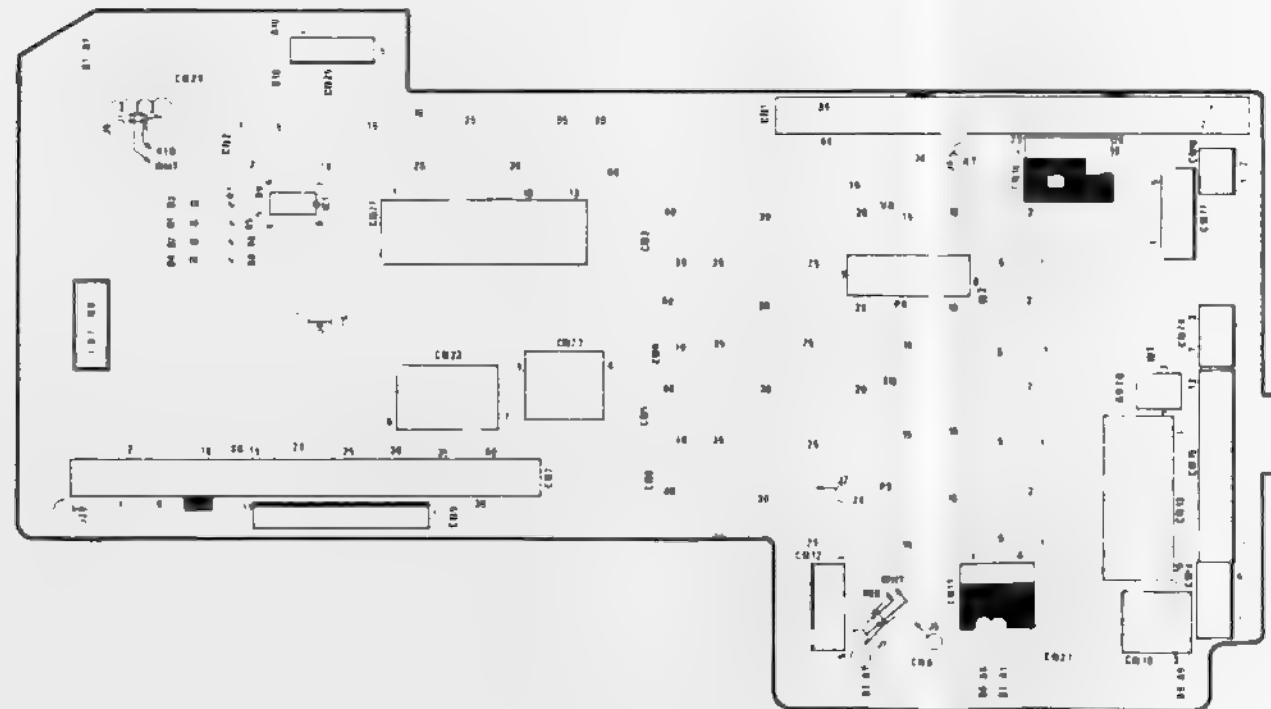
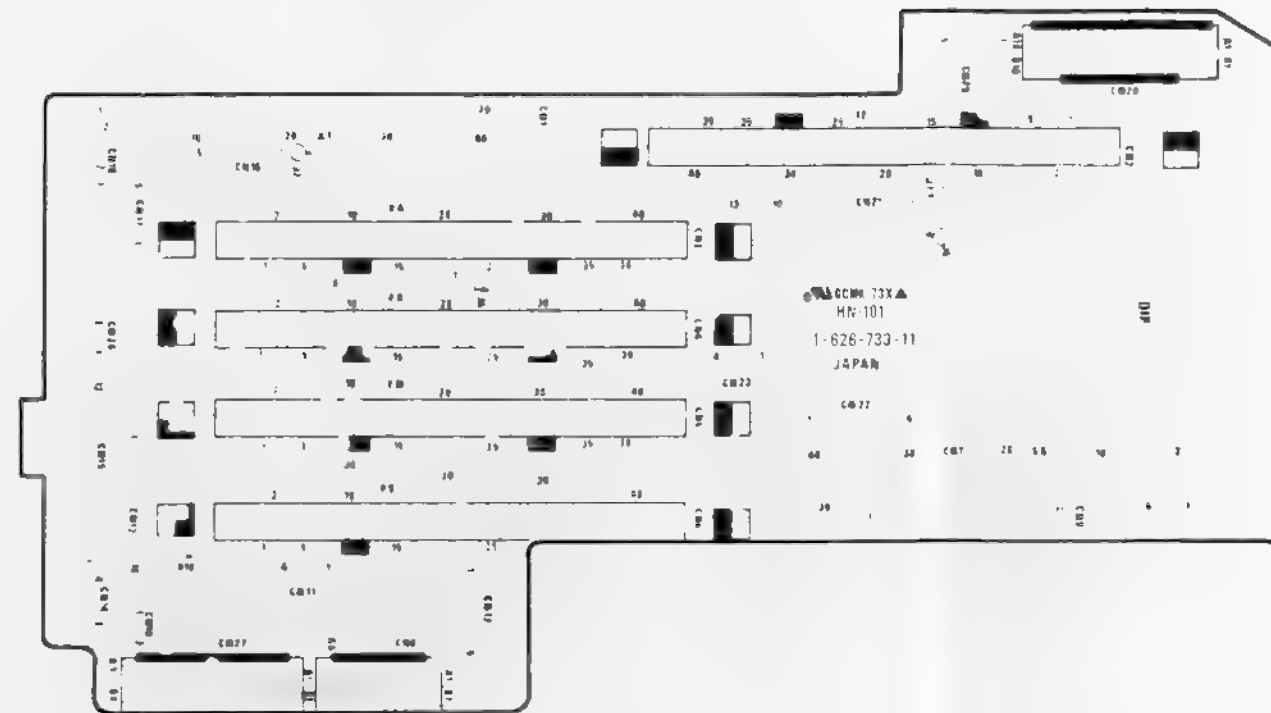


CN-189 BOARD



HN-101 BOARD

Ser.No. 10001-10360 (UC)
30001-30190 (J)
40001-40250 (EK)



C-69 (a)

C-70 (a)

BVP-7 (J) 1-A6
BVP-7 (UC) 1-A6
BVP-7P (EK) 1-A5

CN-189, HN-101, SW-114
SW-115A, SW-116, SW-256

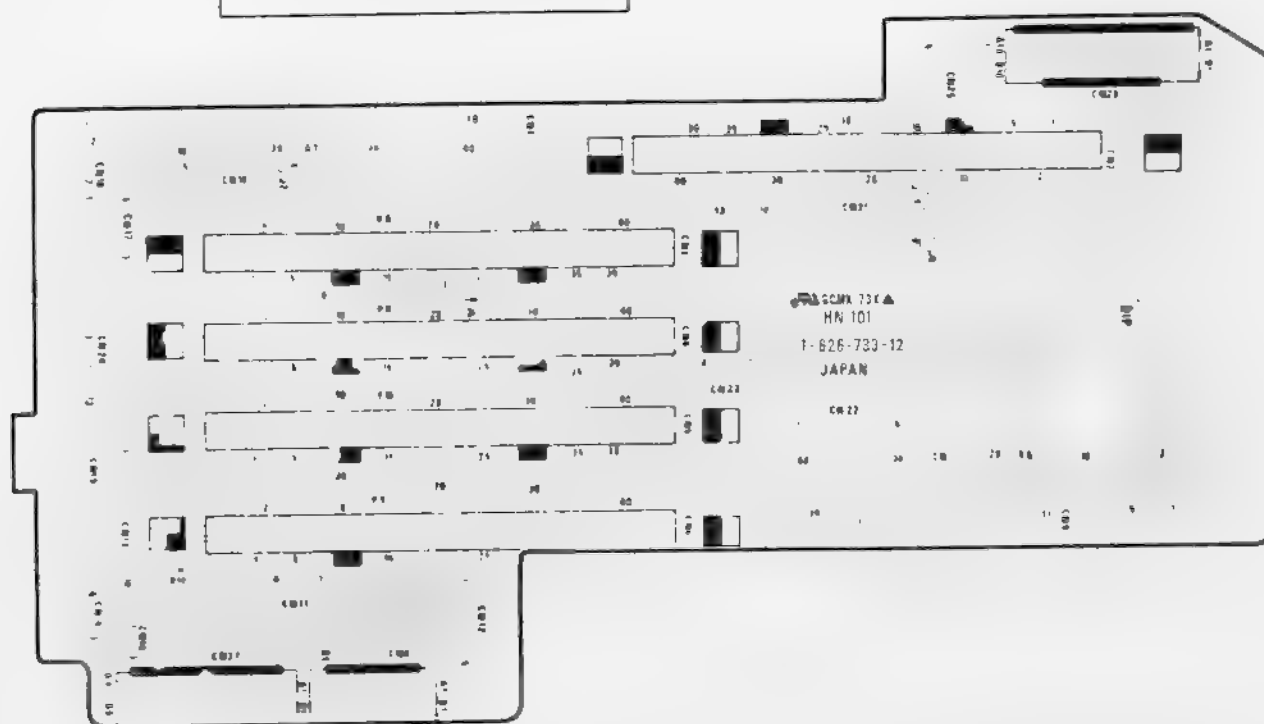
FRAME

FRAME

CN-189, HN-101, SW-114
SW-115A, SW-116, SW-256

HN-101 BOARD

Ser. No. 10361-10660 (UC)
30191-30360 (J)
40251-40780 (EK)



C-69 (b)

HN-101 BOARD

Ser. No. 10661-
30361- (UC)
40781- (J)
(EK)



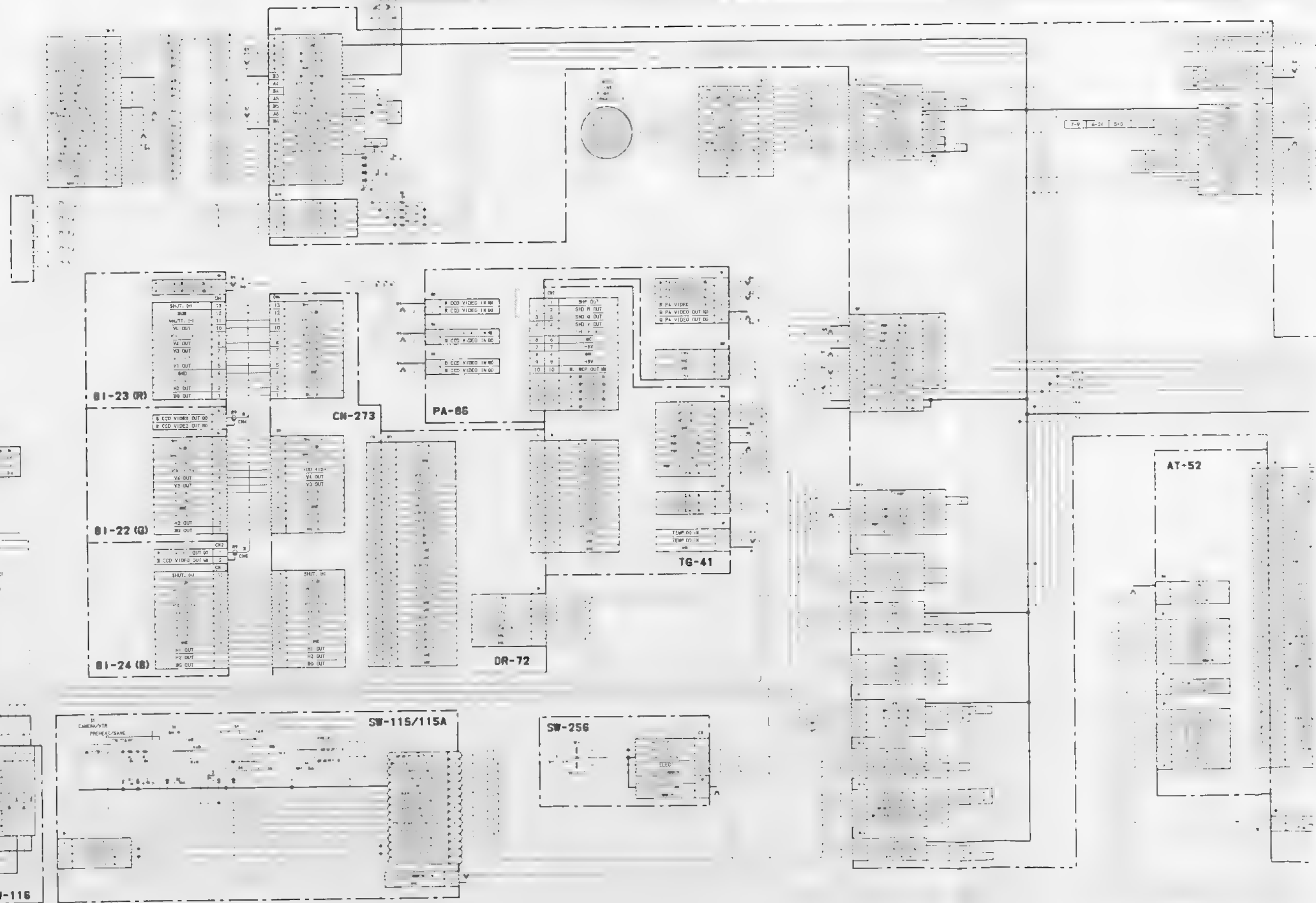
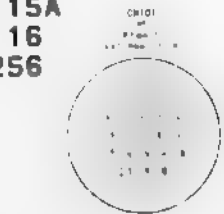
C-70 (b)

BVP-7 (J) 1-R6
BVP-7 (UC) 1-R6
BVP-7P (EK) 1-R6

SW-114 MP-19 HN-101 FRAME
SW-256 SW-116 SW-115A

FRAME HN-101 MP-19 SW-114
SW-115A SW-116 SW-256

FRAME WIRING
HN-101
MP-19
SW-114
SW-115A
SW-116
SW-256



A

C-71

B

C

D

E

C-72

F

G

FRAME MN-101 MP-19 SW-114
SW-115A SW-116 SW-256



SECTION D SPARE PARTS

PARTS INFORMATION

1. Safety Related Component Warning

Components identified by shading marked with ! on the schematic diagrams, exploded views and electrical spare parts list are critical to safe operation. Replace these components with Sony parts whose parts numbers appear as shown in this manual or in service manual supplements published by Sony.

2. Replacement Parts supplied from Sony Parts Center will sometimes have different shape and outside view from the parts which actually in use. This is due to "accommodating the improved parts and/or engineering changes" or "standardization of genuine parts." This manual's exploded view and electrical spare parts lists are indicating the parts numbers of "the standardized genuine parts at present." Regarding engineering parts and diagrams changes in our engineering department, refer SECTION 9. CHANGE INFORMATION.
3. The parts marked with "S" in the SP column of the exploded views and electrical spare parts list are normally required for routine service work. Orders for parts marked with "O" will be processed, but allow for additional delivery time.
4. Item with no parts number and/or no description are not stocked because they are seldom required for routine service.

5. Abbreviation

REF.No.	DESCRIPTION	REF.No.	DESCRIPTION	REF.No.	DESCRIPTION
C	CAPACITOR	IC	IC	R	RESISTOR
CN	CONNECTOR	L	INDUCTOR	RV	VARIABLE RESISTOR
CP	COMBINATION PARTS	LV	VARIABLE INDUCTOR	T	TRANSFORMER
D	DIODE	Q	TRANSISTOR	VDR	OSCILLATOR
FB	FERRITE BEAD RIND	S	SWITCH	X	OSCILLATOR
FL	FILTER				

All capacitors are in micro farads unless otherwise specified.
 All inductors are in micro henries unless otherwise specified.
 All resistors are in ohms.

EXPLODED VIEW

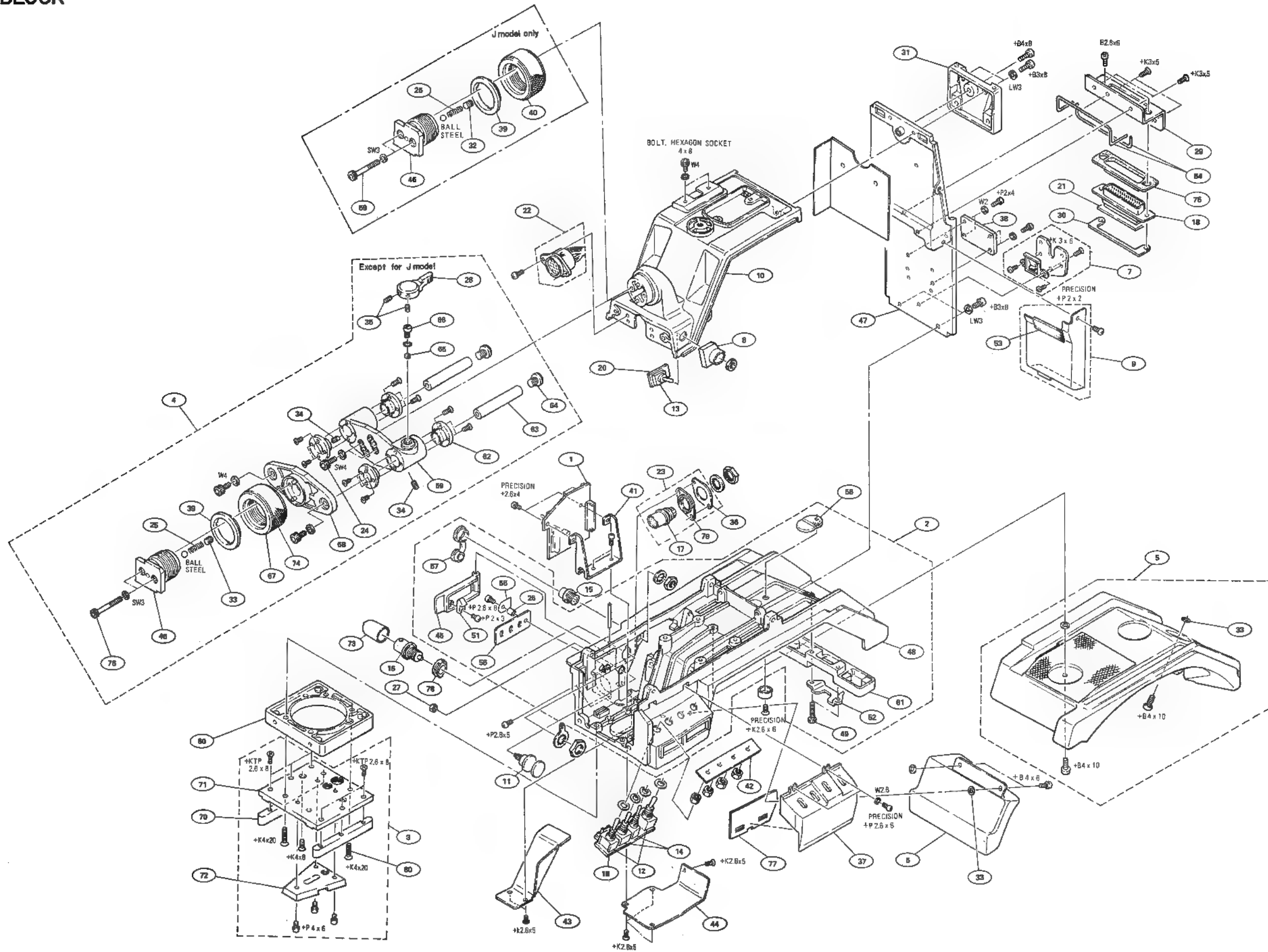
[FRONT ASSY]

No.	Parts No.	SP Description
1	A-7513-757-A	o MOUNTED CIRCUIT BOARD "DR-72"
2	A-7513-758-A	o MOUNTED CIRCUIT BOARD "PA-86"
3	A-7575-114-B	s CCD UNIT (J,UC)
	A-7575-115-B	s CCD UNIT (EK)
4	1-547-259-11	o FILTER UNIT, OPTICAL
5	1-553-739-21	s SWITCH, KEYBOARD "VTR START"
6	1-554-395-11	s SWITCH, TOGGLE "A W/B BAL"
7	1-618-176-11	o PRINTED CIRCUIT BOARD "SW-114"
8	1-618-177-11	o PRINTED CIRCUIT BOARD "SW-116"
9	3-672-221-02	s PACKING, CONTROL
10	3-678-629-00	s LEVER, MOUNT
11	3-678-684-00	o HOLDER, CABLE
12	3-699-048-01	s CAP, MOUNT
13	3-701-505-00	s SETSCREW, DOUBLE POINT 3x3
14	3-710-024-01	o PACKING, VF
15	3-710-025-02	o GUARD (F), SWITCH
16	3-710-042-04	s PANEL, FRONT
17	3-710-054-01	s KNOB, FILTER
18	3-710-057-02	o STAY (T), SHIELD PLATE
19	3-711-705-01	o CAP, DROP PROTECTION
20	3-711-714-01	o SPRING
21	3-711-715-01	o RUBBER, SHIELD
22	3-711-756-01	o STAY (B2), SHIELD PLATE
23	3-711-757-03	o SUPPORT
24	3-711-762-01	o RAIL, TG GUIDE
25	3-884-053-00	s RING (O)
26	9-911-841-xx	s CUSHION Ser. No. 10001-10800 (UC) Ser. No. 30001-30500 (J) Ser. No. 40001-41510 (EK)

CHASSIS BLOCK

CHASSIS BLOCK

CHASSIS BLOCK



[CHASSIS BLOCK]

No.	Parts No.	SP Description	No.	Parts No.	SP Description
1	A-7513-584-A	o MOUNTED CIRCUIT BOARD, "RG-20" (J,UC)	36	3-710-002-01	o BRACKET
	A-7513-594-A	o MOUNTED CIRCUIT BOARD, "RG-20P" (EK)	37	3-710-001-01	o COVER, SW INDICATION
2	A-7550-049-C	o CHASSIS BLOCK ASSY, BASE	38	3-710-017-01	o PLATE, PROTECTION
3	A-7612-298-A	s SHOE ASSY, V	39	3-710-018-01	s COLLAR, SLIDE
4	A-7612-311-A	o SLIDE ASSY, VF (Except for J)	40	3-710-019-01	o RING, LOCK (J)
5	A-7612-312-C	s PAD ASSY (2), SHOULDER	41	3-710-026-03	o PLATE, FIXED, RG-14
6	3-720-902-01	s PAD (2) (SMALL), SHOULDER	42	3-710-027-01	o SHEET, BLIND
7	X-3710-026-1	o STOPER ASSY	43	3-710-029-02	o LID (B), B
8	X-3710-029-1	s GUARD ASSY, SHUTTER	44	3-710-030-01	o LID (A), B
9	X-3710-038-2	o CASE ASSY, SHIELD	45	3-710-031-01	o COVER, SWITCH
10	X-3710-042-1	o PLATE (2) ASSY, UPPER (UC,EK)	46	3-710-039-03	s SHOE, SLIDE
	X-3710-002-5	s PLATE ASSY, UPPER (J)	47	3-710-047-03	o PLATE, REAR
11	1-223-165-00	s RES, ADJ, WIREWOUND 10K "PEDESTAL"	48	3-710-049-06	s CHASSIS, BASE
12	1-554-356-00	s SWITCH, TOGGLE "CAMERA/VTR", "WHT BAL"	49	3-710-050-11	s BOLT (M2.6x15), HEXAGON HOLE
13	1-554-396-00	s SWITCH, TOGGLE "SHUTTER"	50	3-710-092-01	o FOOT, REAR
14	1-554-400-00	s SWITCH, TOGGLE "GAIN", "OUTPUT/DCC"	51	3-710-093-01	o SPACER, SWITCH
15	1-561-233-21	s RECEPTACLE, 6P "REMOTE"	52	3-711-703-01	o STOPPER
16	1-562-261-21	s CONNECTOR, COAXIAL (BNC)	53	3-711-704-01	o COVER, RUBBER
17	1-562-221-21	s RECEPTACLE, 12P "LENS"	54	3-711-715-01	o RUBBER SHIELD
19	1-618-175-13	o PRINTED CIRCUIT BOARD "SW-115A"	55	3-711-727-01	o SPRING, LEAF
20	1-623-749-11	o PRINTED CIRCUIT BOARD "SW-256"	56	3-711-754-03	o PLATE (2), INDICATION, RG
22	1-937-212-21	o HARNESS (VF)	57	3-711-755-01	o COVER, P-R
	1-565-051-11	s RECEPTACLE, 20P "VF"	58	3-711-760-01	o SPRING
23	1-937-218-13	o HARNESS (LENS)	59	3-711-765-01	s BOLT (M3), HEXAGON SOCKET(J)
24	2-990-375-11	s BOLT M3x10, HEXAGON SOCKET (Except for J)	60	3-711-788-01	o SPACER, P5
25	3-641-622-00	s SPRING, COMPRESSION	61	3-711-789-01	o SPACER, REAR
26	3-659-365-00	s SPACER (4x3)	62	3-711-790-01	o SPACER, (A) (Except for J)
27	3-664-519-00	o NUT (M4)	63	3-711-791-01	o ARM (Except for J)
28	3-673-046-00	s LEVER, LOCK (Except for J)	64	3-711-792-01	o SCREW (Except for J)
29	3-675-902-21	o BRACKET (A), CONNECTOR	65	3-711-793-01	o CUSHION, STOPPER (Except for J)
30	3-675-929-00	o NUT (50P), PLATE	66	3-711-794-01	o PIN, STOPPER (Except for J)
31	3-675-958-12	o SHOE, C	67	3-711-795-01	o RING (B), LOCK
32	3-682-760-01	o SCREW (M7-0.75), ADJUSTMENT	68	3-711-796-01	o TABLE, FIXED, VF SHOE (Except for J)
33	3-687-116-01	o WASHER (4), STOPPER	69	3-711-797-04	o TABLE, FIXED, VF SLIDE (Except for J)
34	3-701-506-01	s SETSCREW, DOUBLE POINT 3x4 (Except for J)	70	3-716-390-01	o GUARD, CAMERA SHOE
35	3-701-508-00	s SETSCREW, DOUBLE POINT 3x6 (Except for J)	71	3-716-391-01	o WEDGE, MOUNTING
			72	3-716-392-01	s SHOE, CAMERA
			73	3-717-823-01	s COVER, BNC
			74	3-720-919-01	o RUBBER, LOCK RING (Except for J)
			75	3-720-961-01	o PACKING, 50P
			76	4-904-818-01	s BOLT (3x25), HEXAGON HOLE (Except for J)
			77	3-720-960-01	o PACKING, SWITTC
			78	3-692-444-01	o SPACER, BNC INSULATING Ser.No 10291~ (UC) 30161~ (J) 40201~ (EK)
			79	3-725-297-01	o SPACER (LENS)
			80	3-729-072-11	s SCREW, +K (4x20)
			A	1-939-723-15	o HARNESS (50P PC BOARD TYPE)

[BOARD BLOCK]

No.	Parts No.	SP Description
1	A-7513-765-A	o MOUNTED CIRCUIT BOARD "PR-121" (J)
	A-7513-941-A	o MOUNTED CIRCUIT BOARD "PR-121" (UC)
	A-7513-766-A	o MOUNTED CIRCUIT BOARD "PR-121P" (EK)
2	A-7513-762-A	o MOUNTED CIRCUIT BOARD "IE-24" (J,UC)
	A-7513-763-A	o MOUNTED CIRCUIT BOARD "IE-24P" (EK)
3	A-7513-764-A	o MOUNTED CIRCUIT BOARD "VA-77"
4	A-7513-618-A	o MOUNTED CIRCUIT BOARD "EN-69" (J,UC)
	A-7513-619-A	o MOUNTED CIRCUIT BOARD "EN-69P" (EK)
5	A-7513-767-A	o MOUNTED CIRCUIT BOARD "PS-173"
6	A-7513-771-A	o MOUNTED CIRCUIT BOARD "HN-101"
7	A-7513-768-A	o MOUNTED CIRCUIT BOARD "SG-143" (J,UC)
	A-7513-769-A	o MOUNTED CIRCUIT BOARD "SG-143P" (EK)
8	A-7513-770-A	o MOUNTED CIRCUIT BOARD "AT-52A"
9	X-3710-003-6	o HANDLE ASSY
10	X-3710-005-5	s PANEL ASSY, RIGHT
11	X-3710-007-1	o PLATE ASSY, SHIELD, EN
12	X-3710-049-2	s PANEL ASSY, LEFT
13	X-3710-037-1	o SUSPENSION ASSY (C)
14	2-277-468-01	o PLATE, ORNAMENTAL, CAMERA SHOE
15	2-352-317-01	o CUSHION, PCB
16	3-657-700-00	s BRACKET, ACCESSORY
17	3-657-705-00	s BOLT, HEXAGON HOLE
18	3-657-705-21	s BOLT, HEXAGON HOLE (M4x15)
19	3-673-018-11	s SCREW, BLIND
20	3-678-607-00	o LABEL, FILTER
21	3-687-116-01	o WASHER (4), STOPPER
22	3-701-439-11	s WASHER
23	3-710-015-01	o LID, HANDLE
24	3-710-016-02	s SCREW (M4x18), LID
25	3-710-032-01	s PAD
26	3-710-033-03	o PLATE, SHIELD PC BOARD
27	3-710-040-02	o GUIDE (B)
28	3-710-041-01	o RAIL (T), GUIDE
29	3-710-044-01	o HANDLE
30	3-710-053-02	o VALVE, ADJUSTMENT
31	3-710-067-01	o CUSHION
32	3-678-601-01	o LABEL, SWITCH
33	3-711-715-01	o RUBBER, SHIELD
34	3-711-775-01	o LEVER, PULL
35	3-711-783-01	o LABEL, (SG), PC BOARD
36	3-711-798-01	o LABEL, (AT-2), PC BOARD
37	4-889-014-00	o CUSHION, PCB
38	3-669-595-00	s WASHER (2), STOPPER
39	3-711-767-01	s SCREW, STOPPER
40	3-710-034-01	o PLATE, SHIELD AT
41	3-720-963-01	o COVER, CCD BLOCK

BOARD BLOCK

This technical drawing is an exploded view of a mechanical assembly, likely a piece of industrial machinery. It shows the relationship between various components, which are numbered for identification. The assembly includes a central motor or actuator unit, a base plate, a top cover, and several internal structural and mounting components. Key features and specifications include:

- Part Numbers:** Numerous parts are labeled with circled numbers, including 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, and 41.
- Technical Specifications:**
 - PRECISION +P 2.5 x 6**: Specified for parts 22, 23, and 28.
 - PRECISION +P 2 x 3**: Specified for part 11.
 - +B2.5 x 6**: Specified for part 38.
 - +P1P 2.5 x 6**: Specified for part 28.
 - +P2.5 x 4**: Specified for parts 17 and 33.
 - +B2.5 x 6**: Specified for part 38.
- Assembly Structure:**
 - The central component is a motor/actuator with a circular face and mounting flange.
 - It is mounted on a base plate (part 1) which has a series of vertical slots.
 - A top cover (part 9) is shown with various mounting points and a handle-like structure.
 - Internal components include a series of vertical plates (parts 1, 2, 3, 4) and a complex linkage or timing mechanism (parts 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41).

[illegible]

BVP-7 (J) 1-R7
BVP-7 (UC) 1-R7
BVP-7P(EK) 1-R6

[VIEWFINDER]

No.	Parts No.	SP Description	No.	Parts No.	SP Description
1	A-7403-115-A	o VF COMPLETE ASSY	38	3-720-945-01	o SPACER, VR
2	A-7513-772-A	o MOUNTED CIRCUIT BOARD "VR-78"	39	3-720-946-01	o PIN, MICROPHONE STOPPER
3	A-7513-773-A	o MOUNTED CIRCUIT BOARD "VF-39"	40	3-720-954-02	o LABEL, SW. VR
4	X-3710-050-4	s VF (MAIN) BLOCK ASSY	41	3-720-965-03	o PLATE (B), DISPLAY
5	X-3722-365-1	s LENS ASSY	42	3-722-475-03	o COVER (A)
6	X-3722-366-4	o TUBE ASSY, VF ROTARY GUIDE	43	3-722-476-01	o NUT, PLATE
7	X-3722-368-4	o LID ASSY, VF	44	3-722-477-02	■ BRACKET, SW Ser No.10001-10750 BVP-7(UC) 30001-30420 BVP-7(J) 40001-41060 BVP-7P(EK)
8	1-237-954-11	s RES, VAR, CARBON 1K "CONTRAST"		X-3722-426-1	o BRACKET ASSY, SW Ser No.10751- BVP-7(UC) 30421- BVP-7(J) 41061- BVP-7P(EK)
9	1-237-955-11	s RES, VAR, CARBON 10K "AUDIO LEVEL CH-1" "PEAKING"	45	3-722-478-01	s RING, O
10	1-238-216-11	s RES, VAR, CARBON 50K "BRIGHT"	46	3-722-479-01	o GUIDE, TUBE
11	1-542-106-11	s MICROPHONE	47	3-722-480-01	o RING
12	1-546-066-12	s 1.5" CRT ASSY	48	3-722-481-01	o HOLDER, PC BOARD
13	1-570-984-11	s SWITCH, TOGGLE "AUDIO/FILTER" "ZEBRA"	49	3-722-482-03	o RETAINER, RING
14	1-570-985-11	s SWITCH, TOGGLE "TALLY"	50	3-722-483-01	s LOUPE, VF
15	1-626-735-11	o PRINTED CIRCUIT BOARD "CN-274"	51	3-722-485-01	o ROLLER, SLIDE
16	1-626-737-11	o PRINTED CIRCUIT BOARD "LP-45"	52	3-722-486-02	s KNOB
17	1-626-738-11	■ PRINTED CIRCUIT BOARD "SW-300"	53	3-722-488-04	o BRACKET, PC BOARD Ser No.10001-10060 BVP-7(UC) 30001-30040 BVP-7(J)
18	1-940-868-11	s HARNESS (VF CABLE)		3-720-974-02	o BRACKET, PC BOARD(2) Ser No.10061- BVP-7(UC) 30041- BVP-7(J) 40001- BVP-7P(EK)
19	2-277-457-00	s KNOB, STOPPER	54	3-722-489-02	o GUIDE, ROLLER
20	2-277-466-01	o SPRING, COMPRESSION	55	3-722-492-01	o HOLDER, (B) LENS
21	2-527-548-00	o SUPPORT (D) Ser No.10001-10880 BVP-7(UC) 30001-30570 BVP-7(J) 40001-41760 BVP-7P(EK)	56	3-725-282-13	o HINGE, PC BOARD
	3-734-740-01	■ SUPPORT Ser No.10881- BVP-7(UC) 30571- BVP-7(J) 41761- BVP-7P(EK)	57	3-722-494-01	o BRACKET, VR SW
22	3-335-207-01	s SHAFT, MOTOR	58	3-722-497-01	o TUBE
23	3-657-654-00	o RING, ORNAMENTAL	59	3-723-001-02	o TUBE, VF
24	3-672-241-00	o RING (B), SLEEVE	60	3-723-069-02	o PROTECTOR, MC
25	3-672-247-00	o RING (A), SLEEVE	61	3-723-070-03	o MIRROR Ser No.10001-11420 BVP-7(UC) 30001-30680 BVP-7(J) 40001-42205 BVP-7(EK)
27	3-680-595-01	o SUPPORT, ROTARY		3-729-099-01	o MIRROR Ser No.11421- BVP-7(UC) 30681- BVP-7(J) 42206- BVP-7(EK)
28	3-685-104-01	s NUT (M6), CONTROL	62	3-723-073-01	o CUSHION, MIRROR
29	3-685-129-01	o SPRING (N), LEAF, VF	63	3-723-075-02	o RING, FILTER
30	3-729-054-01	o WASHER, STOPPER	64	3-723-076-02	■ HOLDER, MIRROR Ser No.10001-11420 BVP-7(UC) 30001-30680 BVP-7(J) 40001-42205 BVP-7(EK)
32	3-710-007-02	s GUIDE, VF SLIDE		3-742-001-01	o HOLDER(2), MIRROR Ser No.11421- BVP-7(UC) 30681- BVP-7(J) 42206- BVP-7(EK)
33	3-710-008-01	s HOUSING, STOPPER	65	3-723-077-01	o RING, ADJUSTMENT
34	3-725-258-03	o STOPPER, ROTARY	66	3-723-079-01	s EYE CUP
35	3-729-701-21	s RUBBER (CARBON), CONDUCTIVE	67	3-724-744-02	o WASHER
36	3-716-342-02	o GUARD, CONNECTOR	68	3-724-745-01	o SHEET (C), INSULATING Ser No.10001-10750 BVP-7(UC) 30001-30420 BVP-7(J) 40001-41060 BVP-7P(EK)
37	3-720-944-01	o NUT, CN PC BOARD			

BVP-7 (J) 1-R7
BVP-7(UC) 1-R7
BVP-7P(EK) 1-R6

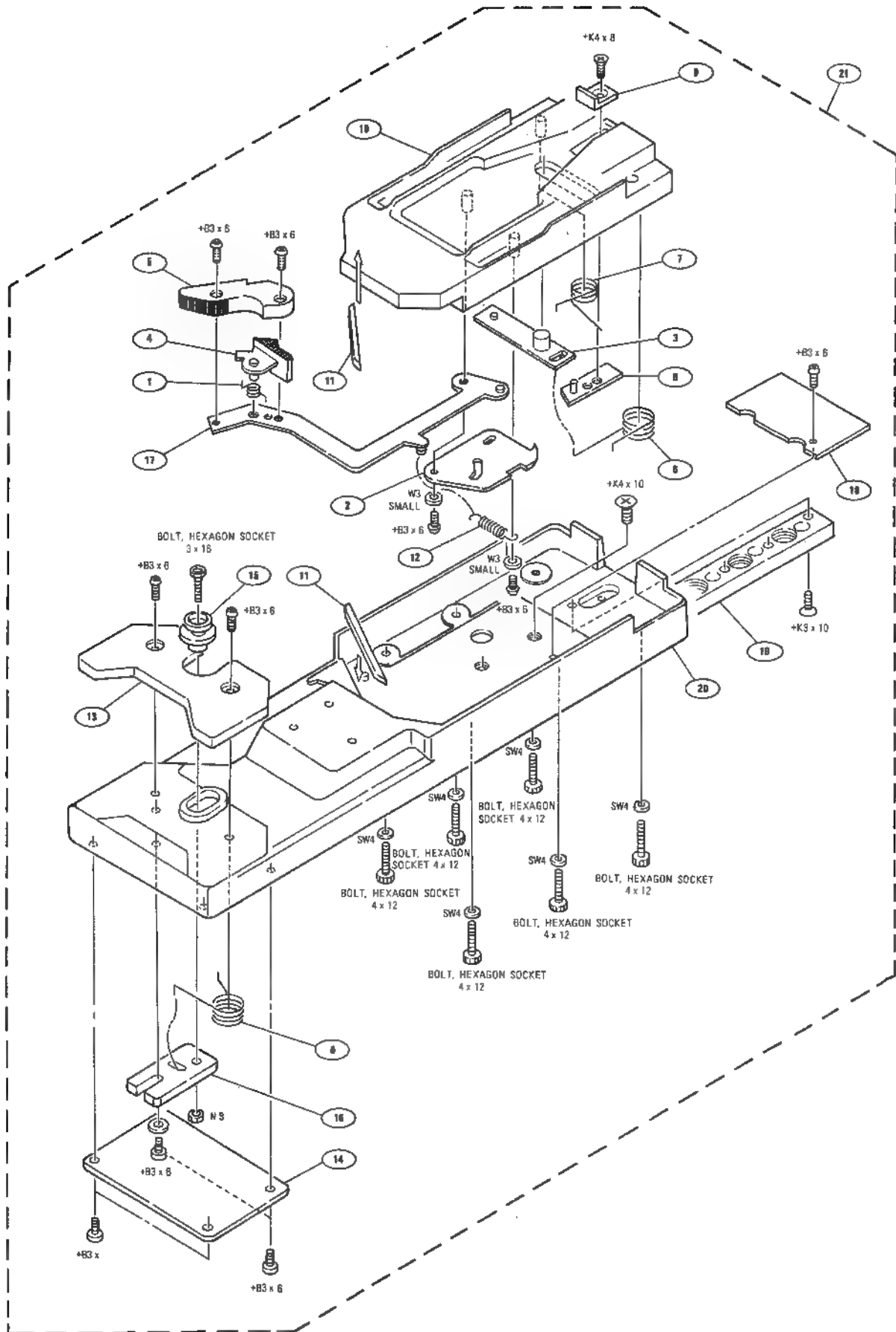
No.	Parts No.	SP Description
69	3-724-746-01	o SHEET (B), INSULATING
70	3-725-220-01	o TUBE (A), CRT
71	3-725-221-03	o TUBE (B), CRT
72	3-725-222-04	o PACKING, RING
73	3-725-257-01	o BOSS
74	3-725-277-02	s KNOB (B)
75	3-725-278-02	s PACKING (SW), SHIELD
76	3-725-280-01	s PACKING (A), SHIELD
77	3-720-977-01	s PACKING (A), SHIELD, BRACKET
78	3-720-978-01	o PACKING (B), SHIELD, BRACKET
79	3-720-970-01	s PLATE(A), LIGHT INTERCEPTION
80	3-720-997-01	s PLATE, LIGHT INTERCEPTION
82	3-729-062-11	o SPACER, MASK
83	A-7612-356-A	o PROTECTOR ASSY, MC
84	X-3710-055-2	o BRACKET ASSY (B), VR.SW
85	3-734-739-01	o SHEET, INSULATING, MASK Ser No.10881- BVP-7(UC) 30571- BVP-7(J) 41761- BVP-7P(EK)
86	3-685-118-01	o SPACER, RING Ser No.11041- BVP-7(UC) 30611- BVP-7(J) 41946- BVP-7P(EK)
87	3-734-741-01	o SHEET, INTERCEPTION Ser No.11221- BVP-7(UC) 30651- BVP-7(J) 42026- BVP-7(EK)

D-3. TRIPOD ADAPTOR

[VCT-14]

No.	Parts No.	SP Description
1	2-381-631-01	o SPRING
2	2-381-632-01	o ARM, LOCKER
3	2-381-633-01	■ SOLENOID
4	2-381-635-01	o LEVER, LOCK
5	2-381-636-01	o KNOB
6	2-381-637-01	o SPRING
7	2-381-638-01	o SPRING
8	2-381-640-01	o DOG
9	2-381-641-01	■ COLLAR
10	2-381-642-02	■ MOUNT
11	2-381-648-01	■ INSULATOR, KNOB
12	2-381-652-01	o SPRING, TENSION
13	3-678-704-00	o SPACER
14	3-720-906-01	o LID (S), REAR
15	3-720-907-01	■ PIN (S), REAR
16	3-720-908-01	■ TABLE (S), PIN, REAR
17	3-720-909-01	o KNOB, CRANK
18	3-720-910-01	■ SHEET, SLIDE
19	3-720-911-01	o BASE, TRIPOD FITTING SCREW
20	3-720-912-02	o FRAME (S)
21	OPTIONAL ACCESSORY: TRIPOD ADAPTOR "VCT-14"	

TRIPOD ADAPTOR



BVP-7 (J) 1-R6
BVP-7 (UC) 1-R6
BVP-7P (EK) 1-R5

SCREWS

+B Bzn-N	
7-621-000-00	
SIZE	Parts No.
2 x 3	772-00
x 4	772-10
x 5	772-20
x 6	772-30
x 8	772-40
x 10	772-50
x 12	772-60
x 14	772-70
x 16	772-80
x 20	—
2.6 x 3	775-00
x 4	775-10
x 5	775-20
x 6	775-30
x 8	775-40
x 10	775-50
x 12	775-60
x 14	775-70
x 16	775-80
x 20	775-90

+B Bzn-N	
7-682-000-00	
SIZE	Parts No.
3 x 3	544-08
x 4	545-08
x 5	546-08
x 6	547-08
x 8	548-08
x 10	549-08
x 12	550-08
x 14	551-08
x 16	552-08
x 20	553-08
x 30	556-08
4 x 4	558-08
x 5	559-08
x 6	560-08
x 8	561-08
x 10	562-08
x 12	563-08
x 14	564-08
x 16	565-08
x 20	566-08
5 x 8	574-08
x 10	575-08
x 12	576-08
x 14	577-08
x 16	578-08
x 20	579-08

+B Cr-N	
7-682-000-00	
SIZE	Parts No.
3 x 3	544-04
x 4	545-04
x 5	546-04
x 6	547-04
x 8	548-04
x 10	549-04
x 12	550-04
x 14	551-04
x 16	552-04
x 20	553-04
4 x 4	558-04
x 5	559-04
x 6	560-04
x 8	561-04
x 10	562-04
x 12	563-04
x 14	564-04
x 16	565-04
x 20	566-04
5 x 8	574-04
x 10	575-04
x 12	576-04
x 14	577-04
x 16	578-04
x 20	579-04

+K Bzn-N	
7-621-000-00	
SIZE	Parts No.
2 x 3	555-10
x 4	556-10
x 5	557-10
x 6	558-10
x 8	559-10
x 10	560-10
x 12	561-10
x 14	—
x 16	—
x 20	—
2.6 x 4	558-20
x 5	559-20
x 6	560-20
x 8	561-20
x 10	562-20
x 12	563-20
x 14	564-20
x 16	565-20
x 20	566-20

+K Bzn-N	
7-682-000-00	
SIZE	Parts No.
3 x 4	245-09
x 5	246-09
x 6	247-09
x 8	248-09
x 10	249-09
x 12	250-09
x 14	251-09
x 16	252-09
x 20	253-09
4 x 6	260-09
x 8	261-09
x 10	262-09
x 12	263-09
x 14	264-09
x 16	265-09
x 20	266-09

+K Cr-N	
7-682-000-00	
SIZE	Parts No.
3 x 4	245-04
x 5	246-04
x 6	247-04
x 8	248-04
x 10	249-04
x 12	250-04
x 14	251-04
x 16	252-04
x 20	253-04
4 x 6	260-04
x 8	261-04
x 10	262-04
x 12	263-04
x 14	264-04
x 16	265-04
x 20	266-04

+P Bzn-N	
7-682-000-00	
SIZE	Parts No.
3 x 3	114-08
x 4	115-08
x 5	116-08
x 6	117-08
x 8	118-08
x 10	119-08
x 12	120-08
x 14	121-08
4 x 4	118-08
x 5	119-08
x 6	120-08
x 8	121-08
x 10	122-08
x 12	123-08
x 14	124-08
x 16	125-08
x 20	126-08

+PS Bzn-N	
7-682-000-00	
SIZE	Parts No.
2 x 4	253-00
x 5	253-10
x 6	253-20
x 8	253-30
x 10	253-40
x 12	253-50
2.6 x 4	253-90
x 5	254-00
x 6	254-10
x 8	254-20
x 10	254-30
x 12	254-40
x 14	254-50
x 16	254-60
x 20	254-60
3 x 5	546-09
x 6	547-09
x 8	548-09
x 10	549-09
x 12	550-09
x 14	551-09
x 16	552-09
x 20	—
4 x 6	—
x 8	—
x 10	—
x 12	—
x 14	—
x 16	—
x 20	—

PRECISION +K Bzn-N	
7-627-000-00	
SIZE	Parts No.
1.7 x 1.8	—
x 2	450-28
x 2.2	—
x 2.5	450-48
x 2.8	—
x 3	450-58
x 3.5	—
x 4	450-78
x 4.5	—
x 5	450-98
x 5.5	—
x 6	—
2 x 2	452-08
x 2.2	452-88
x 2.5	452-48
x 2.8	—
x 3	452-18
x 3.5	452-98
x 4	452-28
x 4.5	—
x 5	452-38
x 5.5	—
x 6	452-58
x 7	452-68
x 8	452-78
2.6 x 3.5	—
x 4	—
x 4.5	454-28
x 5	454-38
x 5.5	—
x 6	—
x 7	—
x 8	—

PRECISION +K Cr-N	
7-627-000-00	
SIZE	Parts No.
1.7 x 1.8	—
x 2	—
x 2.2	—
x 2.5	—
x 2.8	—
x 3	—
x 3.5	—
x 4	—
x 4.5	—
x 5	—
x 5.5	—
x 6	—
2 x 2	452-07
x 2.2	452-87
x 2.5	—
x 2.8	—
x 3	452-17
x 3.5	—
x 4	452-27
x 4.5	—
x 5	—
x 5.5	—
x 6	—
x 7	452-67
x 8	—
2.6 x 3.5	—
x 4	454-17
x 4.5	—
x 5	454-37
x 5.5	—
x 6	—
x 7	—
x 8	—

PRECISION +P Bzn-N	
7-627-000-00	
SIZE	Parts No.
1.7 x 1.8	552-18
x 1.8	—
x 2	552-28
x 2.2	—
x 2.5	552-08
x 2.8	—
x 3	552-38
x 3.5	552-78
x 4	552-48
x 4.5	—
x 5	552-58
x 5.5	—
x 6	—
2 x 1.8	554-38
x 2	553-18
x 2.2	—
x 2.5	553-28
x 2.8	554-58
x 3	553-38
x 3.5	554-18
x 4	553-48
x 4.5	553-58
x 5	554-28
x 5.5	—
x 6	553-68
x 7	553-88
x 8	553-98
x 10	553-78
2.6 x 2.8	556-08
x 3	—
x 3.5	556-28
x 4	556-38
x 4.5	556-48
x 5	556-58
x 5.5	—
x 6	556-78
x 7	—
x 8	—
x 9	—
x 10	—

PRECISION +P Cr-N	
7-627-000-00	
SIZE	Parts No.
1.7 x 1.8	—
x 1.8	—
x 2	552-27
x 2.2	552-87
x 2.5	552-07
x 2.8	—
x 3	552-37
x 3.5	—
x 4	552-47
x 4.5	552-67
x 5	552-57
x 5.5	552-77
x 6	552-77
2 x 1.8	554-37
x 2	553-17
x 2.2	554-07
x 2.5	553-27
x 2.8	—
x 3	553-37
x 3.5	554-17
x 4	553-47
x 4.5	553-57
x 5	553-67
x 5.5	—
x 6	554-27
x 7	553-87
x 8	553-97
x 10	553-77
2.6 x 2.8	556-07
x 3	—
x 3.5	556-37
x 4	—
x 4.5	556-57
x 5	—
x 5.5	556-77
x 7	—
x 8	556-87
x 9	—
x 10	557-47

+P Bzn-N	
7-621-000-00	
SIZE	Parts No.
2 x 3	255-10
x 4	255-20
x 5	255-30
x 6	255-40
x 8	255-50
x 10	255-60
x 12	255-70
x 14	—
x 16	—
x 20	255-20
2.3 x 5	—
x 6	—
x 8	—
x 10	—
x 12	—
x 14	—
x 16	—
x 20	—
2.8 x 3	259-10
x 4	259-20
x 5	259-30
x 6	259-40
x 8	259-50
x 10	259-60
x 12	259-70
x 14	259-80
x 16	259-90
x 20	260-20

TOTSUP BZN-N NON SRT	
7-685-000-00	
SIZE	Parts No.
2 x 4	102-19
2 x 5	103-19
2 x 6	104-19
2 x 8	105-19
2 x 10	106-19
2 x 12	107-19
2.6 x 4	111-19
2.6 x 5	112-19
2.6 x 6	113-19
2.6 x 8	114-19
2.6 x 10	115-19
2.6 x 12	116-19
2.6 x 14	117-19
2.6 x 16	118-19
3 x 5	124-19
3 x 6	125-19
3 x 8	126-19
3 x 10	127-19
3 x 12	128-19
3 x 14	129-19
3 x 16	130-19
3 x 18	—
3 x 20	131-19
3 x 25	132-19
3 x 30	133-19
3 x 35	134-19
3 x 40	135-19
3 x 58	—
4 x 6	138-19
4 x 8	139-19
4 x 10	140-19
4 x 12	141-19
4 x 14	142-19
4 x 16	143-19
4 x 20	144-19
4 x 25	145-19
4 x 30	146-19
4 x 35	147-19

ELECTRICAL PARTS

Part No. SP Description

CAPACITOR, ELECTROLYTIC

0.1 - 100 (E3 + 33 series) 6.3V - 50V

1-124-463-11	s	CAP, ELECT	0.1	20%	50V
1-124-464-11	s	CAP, ELECT	0.22	20%	50V
1-124-252-11	s	CAP, ELECT	0.33	20%	50V
1-124-465-21	s	CAP, ELECT	0.47	20%	50V
1-124-438-11	s	CAP, ELECT	1.0	20%	50V

1-124-257-11	s	CAP, ELECT	2.2	20%	50V
1-124-258-11	s	CAP, ELECT	3.3	20%	50V
1-124-245-11	s	CAP, ELECT	4.7	20%	35V
1-124-259-11	s	CAP, ELECT	4.7	20%	50V
1-124-462-11	s	CAP, ELECT	10	20%	16V

1-124-247-11	s	CAP, ELECT	10	20%	35V
1-124-261-11	s	CAP, ELECT	10	20%	50V
1-124-222-11	s	CAP, ELECT	22	20%	6.3V
1-124-234-11	s	CAP, ELECT	22	20%	16V
1-124-248-11	s	CAP, ELECT	22	20%	35V

1-124-431-11	s	CAP, ELECT	33	20%	4V
1-124-229-11	s	CAP, ELECT	33	20%	10V
1-124-242-11	s	CAP, ELECT	33	20%	25V
1-124-224-11	s	CAP, ELECT	47	20%	6.3V
1-124-236-11	s	CAP, ELECT	47	20%	16V
1-124-584-11	s	CAP, ELECT	100	20%	10V

CAPACITOR, TANTALUM

0.01 - 100 (E6) 3.15V - 35V

1-131-396-11	s	CAP, TANTALUM	0.01	20%	35V
1-131-397-11	s	CAP, TANTALUM	0.015	20%	35V
1-131-398-11	s	CAP, TANTALUM	0.022	20%	35V
1-131-399-11	s	CAP, TANTALUM	0.033	20%	35V
1-131-400-11	s	CAP, TANTALUM	0.047	20%	35V

1-131-401-21	s	CAP, TANTALUM	0.068	10%	35V
1-131-341-21	s	CAP, TANTALUM	0.1	10%	35V
1-131-342-21	s	CAP, TANTALUM	0.15	10%	35V
1-131-343-21	s	CAP, TANTALUM	0.22	10%	35V
1-131-344-21	s	CAP, TANTALUM	0.33	10%	35V

1-131-412-11	s	CAP, TANTALUM	0.47	20%	20V
1-131-345-21	s	CAP, TANTALUM	0.47	10%	35V
1-131-410-11	s	CAP, TANTALUM	0.68	20%	25V
1-131-346-21	s	CAP, TANTALUM	0.68	10%	35V
1-131-413-11	s	CAP, TANTALUM	1.0	20%	20V

1-131-347-21	s	CAP, TANTALUM	1.0	10%	35V
1-131-416-11	s	CAP, TANTALUM	1.5	20%	16V
1-131-348-21	s	CAP, TANTALUM	1.5	10%	35V
1-131-419-11	s	CAP, TANTALUM	2.2	20%	10V
1-131-361-21	s	CAP, TANTALUM	2.2	10%	20V

1-131-349-21	s	CAP, TANTALUM	2.2	10%	35V
1-131-422-11	s	CAP, TANTALUM	3.3	20%	6.3V
1-131-368-21	s	CAP, TANTALUM	3.3	10%	16V
1-131-356-21	s	CAP, TANTALUM	3.3	10%	25V
1-131-350-21	s	CAP, TANTALUM	3.3	10%	35V

1-131-425-11	s	CAP, TANTALUM	4.7	20%	3.15V
1-131-375-21	s	CAP, TANTALUM	4.7	10%	10V
1-131-363-21	s	CAP, TANTALUM	4.7	10%	20V
1-131-351-21	s	CAP, TANTALUM	4.7	10%	35V
1-131-382-21	s	CAP, TANTALUM	6.8	10%	6.3V

Part No. SP Description

1-131-370-21	s	CAP, TANTALUM	6.8	10%	16V
1-131-358-21	s	CAP, TANTALUM	6.8	10%	25V
1-131-352-21	s	CAP, TANTALUM	6.8	10%	35V
1-131-389-21	s	CAP, TANTALUM	10	10%	3.15V
1-131-377-21	s	CAP, TANTALUM	10	10%	10V

1-131-365-21	s	CAP, TANTALUM	10	10%	20V
1-131-353-21	s	CAP, TANTALUM	10	10%	35V
1-131-384-21	s	CAP, TANTALUM	15	10%	6.3V
1-131-372-21	s	CAP, TANTALUM	15	10%	16V
1-131-360-21	s	CAP, TANTALUM	15	10%	25V

1-131-391-21	s	CAP, TANTALUM	22	10%	3.15V
1-131-379-21	s	CAP, TANTALUM	22	10%	10V
1-131-367-21	s	CAP, TANTALUM	22	10%	20V
1-131-386-21	s	CAP, TANTALUM	33	10%	6.3V
1-131-374-21	s	CAP, TANTALUM	33	10%	16V

1-131-393-21	s	CAP, TANTALUM	47	10%	3.15V
1-131-381-21	s	CAP, TANTALUM	47	10%	10V
1-131-388-21	s	CAP, TANTALUM	68	10%	6.3V
1-131-395-21	s	CAP, TANTALUM	100	10%	3.15V

CAPACITOR, CHIP CERAMIC

1pF - 4pF	CH	+0.25pF	50V
6pF - 8pF	CH	+0.5pF	50V
10pF - 1000pF	CH	+5%	50V
1500pF - 6800pF	B	+10%	50V
0.01uF - 0.015uF	B	+10%	50V
0.033uF - 0.047uF	F	+80/-20%	50V
0.068uF - 0.1uF	F	+80/-20%	25V

1-163-083-00	s	CAP,CHIP CERAMIC	1pF	+0.25pF	50V
1-163-085-00	s	CAP,CHIP CERAMIC	2pF	+0.25pF	50V
1-163-087-00	s	CAP,CHIP CERAMIC	4pF	+0.25pF	50V
1-163-089-00	s	CAP,CHIP CERAMIC	6pF	+0.5pF	50V
1-163-091-00	s	CAP,CHIP CERAMIC	8pF	+0.5pF	50V

1-163-093-00	s	CAP, CHIP CERAMIC	10pF	5%	50V
1-163-097-00	s	CAP, CHIP CERAMIC	15pF	5%	50V
1-163-101-00	s	CAP, CHIP CERAMIC	22pF	5%	50V
1-163-105-00	s	CAP, CHIP CERAMIC	33pF	5%	50V
1-163-109-00	s	CAP, CHIP CERAMIC	47pF	5%	50V

1-163-113-00	s	CAP, CHIP CERAMIC	68pF	5%	50V
1-163-117-00	s	CAP, CHIP CERAMIC	100pF	5%	50V
1-163-121-00	s	CAP, CHIP CERAMIC	150pF	5%	50V
1-163-125-00	s	CAP, CHIP CERAMIC	220pF	5%	50V
1-163-129-00	s	CAP, CHIP CERAMIC	330pF	5%	50V

1-163-133-00	s	CAP, CHIP CERAMIC	470pF	5%	50V
1-163-137-00	s	CAP, CHIP CERAMIC	680pF	5%	50V
1-163-141-00	s	CAP, CHIP CERAMIC	1000pF	5%	50V
1-163-145-00	s	CAP, CHIP CERAMIC	1500pF	10%	50V
1-163-013-00	s	CAP, CHIP CERAMIC	2200pF	10%	50V

1-163-015-00	s	CAP, CHIP CERAMIC	3300pF	10%	50V
1-163-017-00	s	CAP, CHIP CERAMIC	4700pF	10%	50V
1-163-019-00	s	CAP, CHIP CERAMIC	6800pF	10%	50V
1-163-021-00	s	CAP, CHIP CERAMIC	0.01	10%	50V
1-163-023-00	s	CAP, CHIP CERAMIC	0.015	10%	50V

1-163-034-00	s	CAP, CHIP CERAMIC	0.033		50V
1-163-035-00	s	CAP, CHIP CERAMIC	0.047		50V
1-163-036-00	s	CAP, CHIP CERAMIC	0.068		50V
1-163-038-00	s	CAP, CHIP CERAMIC	0.1		50V

ELECTRICAL PARTS

Part No. SP Description

CAPACITOR, ELECTROLYTIC

0.1 - 100 (E3 + 33 series) 6.3V - 50V

1-124-463-11	s	CAP, ELECT	0.1	20%	50V
1-124-464-11	s	CAP, ELECT	0.22	20%	50V
1-124-252-11	s	CAP, ELECT	0.33	20%	50V
1-124-465-21	s	CAP, ELECT	0.47	20%	50V
1-124-438-11	s	CAP, ELECT	1.0	20%	50V

1-124-257-11	s	CAP, ELECT	2.2	20%	50V
1-124-258-11	s	CAP, ELECT	3.3	20%	50V
1-124-245-11	s	CAP, ELECT	4.7	20%	35V
1-124-259-11	s	CAP, ELECT	4.7	20%	50V
1-124-462-11	s	CAP, ELECT	10	20%	16V

1-124-247-11	s	CAP, ELECT	10	20%	35V
1-124-261-11	s	CAP, ELECT	10	20%	50V
1-124-222-11	s	CAP, ELECT	22	20%	6.3V
1-124-234-11	s	CAP, ELECT	22	20%	16V
1-124-248-11	s	CAP, ELECT	22	20%	35V

1-124-431-11	s	CAP, ELECT	33	20%	4V
1-124-229-11	s	CAP, ELECT	33	20%	10V
1-124-242-11	s	CAP, ELECT	33	20%	25V
1-124-224-11	s	CAP, ELECT	47	20%	6.3V
1-124-236-11	s	CAP, ELECT	47	20%	16V
1-124-584-11	s	CAP, ELECT	100	20%	10V

CAPACITOR, TANTALUM

0.01 - 100 (E6) 3.15V - 35V

1-131-396-11	s	CAP, TANTALUM	0.01	20%	35V
1-131-397-11	s	CAP, TANTALUM	0.015	20%	35V
1-131-398-11	s	CAP, TANTALUM	0.022	20%	35V
1-131-399-11	s	CAP, TANTALUM	0.033	20%	35V
1-131-400-11	s	CAP, TANTALUM	0.047	20%	35V

1-131-401-21	s	CAP, TANTALUM	0.068	10%	35V
1-131-341-21	s	CAP, TANTALUM	0.1	10%	35V
1-131-342-21	s	CAP, TANTALUM	0.15	10%	35V
1-131-343-21	s	CAP, TANTALUM	0.22	10%	35V
1-131-344-21	s	CAP, TANTALUM	0.33	10%	35V

1-131-412-11	s	CAP, TANTALUM	0.47	20%	20V
1-131-345-21	s	CAP, TANTALUM	0.47	10%	35V
1-131-410-11	s	CAP, TANTALUM	0.68	20%	25V
1-131-346-21	s	CAP, TANTALUM	0.68	10%	35V
1-131-413-11	s	CAP, TANTALUM	1.0	20%	20V

1-131-347-21	s	CAP, TANTALUM	1.0	10%	35V
1-131-416-11	s	CAP, TANTALUM	1.5	20%	16V
1-131-348-21	s	CAP, TANTALUM	1.5	10%	35V
1-131-419-11	s	CAP, TANTALUM	2.2	20%	10V
1-131-361-21	s	CAP, TANTALUM	2.2	10%	20V

1-131-349-21	s	CAP, TANTALUM	2.2	10%	35V
1-131-422-11	s	CAP, TANTALUM	3.3	20%	6.3V
1-131-368-21	s	CAP, TANTALUM	3.3	10%	16V
1-131-356-21	s	CAP, TANTALUM	3.3	10%	25V
1-131-350-21	s	CAP, TANTALUM	3.3	10%	35V

1-131-425-11	s	CAP, TANTALUM	4.7	20%	3.15V
1-131-375-21	s	CAP, TANTALUM	4.7	10%	10V
1-131-363-21	s	CAP, TANTALUM	4.7	10%	20V
1-131-351-21	s	CAP, TANTALUM	4.7	10%	35V
1-131-382-21	s	CAP, TANTALUM	6.8	10%	6.3V

Part No. SP Description

1-131-370-21	s	CAP, TANTALUM	6.8	10%	16V
1-131-358-21	s	CAP, TANTALUM	6.8	10%	25V
1-131-352-21	s	CAP, TANTALUM	6.8	10%	35V
1-131-389-21	s	CAP, TANTALUM	10	10%	3.15V
1-131-377-21	s	CAP, TANTALUM	10	10%	10V

1-131-365-21	s	CAP, TANTALUM	10	10%	20V
1-131-353-21	s	CAP, TANTALUM	10	10%	35V
1-131-384-21	s	CAP, TANTALUM	15	10%	6.3V
1-131-372-21	s	CAP, TANTALUM	15	10%	16V
1-131-360-21	s	CAP, TANTALUM	15	10%	25V

1-131-391-21	s	CAP, TANTALUM	22	10%	3.15V
1-131-379-21	s	CAP, TANTALUM	22	10%	10V
1-131-367-21	s	CAP, TANTALUM	22	10%	20V
1-131-386-21	s	CAP, TANTALUM	33	10%	6.3V
1-131-374-21	s	CAP, TANTALUM	33	10%	16V

1-131-393-21	s	CAP, TANTALUM	47	10%	3.15V
1-131-381-21	s	CAP, TANTALUM	47	10%	10V
1-131-388-21	s	CAP, TANTALUM	68	10%	6.3V
1-131-395-21	s	CAP, TANTALUM	100	10%	3.15V

CAPACITOR, CHIP CERAMIC

1pF - 4pF	CH	+0.25pF	50V
6pF - 8pF	CH	+0.5pF	50V
10pF - 1000pF	CH	+5%	50V
1500pF - 6800pF	B	+10%	50V
0.01uF - 0.015uF	B	+10%	50V
0.033uF - 0.047uF	F	+80/-20%	50V
0.068uF - 0.1uF	F	+80/-20%	25V

1-163-083-00	s	CAP, CHIP CERAMIC	1pF	+0.25pF	50V
1-163-085-00	s	CAP, CHIP CERAMIC	2pF	+0.25pF	50V
1-163-087-00	s	CAP, CHIP CERAMIC	4pF	+0.25pF	50V
1-163-089-00	s	CAP, CHIP CERAMIC	6pF	+0.5pF	50V
1-163-091-00	s	CAP, CHIP CERAMIC	8pF	+0.5pF	50V

1-163-093-00	s	CAP, CHIP CERAMIC	10pF	5%	50V
1-163-097-00	s	CAP, CHIP CERAMIC	15pF	5%	50V
1-163-101-00	s	CAP, CHIP CERAMIC	22pF	5%	50V
1-163-105-00	s	CAP, CHIP CERAMIC	33pF	5%	50V
1-163-109-00	s	CAP, CHIP CERAMIC	47pF	5%	50V

1-163-113-00	s	CAP, CHIP CERAMIC	68pF	5%	50V
1-163-117-00	s	CAP, CHIP CERAMIC	100pF	5%	50V
1-163-121-00	s	CAP, CHIP CERAMIC	150pF	5%	50V
1-163-125-00	s	CAP, CHIP CERAMIC	220pF	5%	50V
1-163-129-00	s	CAP, CHIP CERAMIC	330pF	5%	50V

1-163-133-00	s	CAP, CHIP CERAMIC	470pF	5%	50V
1-163-137-00	s	CAP, CHIP CERAMIC	680pF	5%	50V
1-163-141-00	s	CAP, CHIP CERAMIC	1000pF	5%	50V
1-163-145-00	s	CAP, CHIP CERAMIC	1500pF	10%	50V
1-163-013-00	s	CAP, CHIP CERAMIC	2200pF	10%	50V

1-163-015-00	s	CAP, CHIP CERAMIC	3300pF	10%	50V
1-163-017-00	s	CAP, CHIP CERAMIC	4700pF	10%	50V
1-163-019-00	s	CAP, CHIP CERAMIC	6800pF	10%	50V
1-163-021-00	s	CAP, CHIP CERAMIC	0.01	10%	50V
1-163-023-00	s	CAP, CHIP CERAMIC	0.015	10%	50V

1-163-034-00	s	CAP, CHIP CERAMIC	0.033	50V	
1-163-035-00	s	CAP, CHIP CERAMIC	0.047	50V	
1-163-036-00	s	CAP, CHIP CERAMIC	0.068	50V	
1-163-038-00	s	CAP, CHIP CERAMIC	0.1	50V	

Part No. SP Description

RESISTOR, METAL

1/8W

10 - 100k (E24) 1/8W

1-214-509-00	s	RES, METAL	10	1% 1/8W
1-214-510-00	s	RES, METAL	11	1% 1/8W
1-214-511-00	s	RES, METAL	12	1% 1/8W
1-214-512-00	s	RES, METAL	13	1% 1/8W
1-214-513-00	s	RES, METAL	15	1% 1/8W
1-214-514-00	s	RES, METAL	16	1% 1/8W
1-214-515-00	s	RES, METAL	18	1% 1/8W
1-214-516-00	s	RES, METAL	20	1% 1/8W
1-214-517-00	s	RES, METAL	22	1% 1/8W
1-214-518-00	s	RES, METAL	24	1% 1/8W
1-214-519-00	s	RES, METAL	27	1% 1/8W
1-214-520-00	s	RES, METAL	30	1% 1/8W
1-214-521-00	s	RES, METAL	33	1% 1/8W
1-214-522-00	s	RES, METAL	36	1% 1/8W
1-214-523-00	s	RES, METAL	39	1% 1/8W
1-214-524-00	s	RES, METAL	43	1% 1/8W
1-214-525-00	s	RES, METAL	47	1% 1/8W
1-214-526-00	s	RES, METAL	51	1% 1/8W
1-214-527-00	s	RES, METAL	56	1% 1/8W
1-214-528-00	s	RES, METAL	62	1% 1/8W
1-214-529-00	s	RES, METAL	68	1% 1/8W
1-214-530-00	s	RES, METAL	75	1% 1/8W
1-214-531-00	s	RES, METAL	82	1% 1/8W
1-214-532-00	s	RES, METAL	91	1% 1/8W
1-214-533-00	s	RES, METAL	100	1% 1/8W
1-214-534-00	s	RES, METAL	110	1% 1/8W
1-214-535-00	s	RES, METAL	120	1% 1/8W
1-214-536-00	s	RES, METAL	130	1% 1/8W
1-214-537-00	s	RES, METAL	150	1% 1/8W
1-214-538-00	s	RES, METAL	160	1% 1/8W
1-214-539-00	s	RES, METAL	180	1% 1/8W
1-214-540-00	s	RES, METAL	200	1% 1/8W
1-214-541-00	s	RES, METAL	220	1% 1/8W
1-214-542-00	s	RES, METAL	240	1% 1/8W
1-214-543-00	s	RES, METAL	270	1% 1/8W
1-214-544-00	s	RES, METAL	300	1% 1/8W
1-214-545-00	s	RES, METAL	330	1% 1/8W
1-214-546-00	s	RES, METAL	360	1% 1/8W
1-214-547-00	s	RES, METAL	390	1% 1/8W
1-214-548-00	s	RES, METAL	430	1% 1/8W
1-214-549-00	s	RES, METAL	470	1% 1/8W
1-214-550-00	s	RES, METAL	510	1% 1/8W
1-214-551-00	s	RES, METAL	560	1% 1/8W
1-214-552-00	s	RES, METAL	620	1% 1/8W
1-214-553-00	s	RES, METAL	680	1% 1/8W
1-214-554-00	s	RES, METAL	750	1% 1/8W
1-214-555-00	s	RES, METAL	820	1% 1/8W
1-214-556-00	s	RES, METAL	910	1% 1/8W
1-214-557-00	s	RES, METAL	1.0k	1% 1/8W
1-214-558-00	s	RES, METAL	1.1k	1% 1/8W

Part No. SP Description

1-214-559-00	s	RES, METAL	1.2k	1% 1/8W
1-214-560-00	s	RES, METAL	1.3k	1% 1/8W
1-214-561-00	s	RES, METAL	1.5k	1% 1/8W
1-214-562-00	s	RES, METAL	1.6k	1% 1/8W
1-214-563-00	s	RES, METAL	1.8k	1% 1/8W
1-214-564-00	s	RES, METAL	2.0k	1% 1/8W
1-214-565-00	s	RES, METAL	2.2k	1% 1/8W
1-214-566-00	s	RES, METAL	2.4k	1% 1/8W
1-214-567-00	s	RES, METAL	2.7k	1% 1/8W
1-214-568-00	s	RES, METAL	3.0k	1% 1/8W
1-214-569-00	s	RES, METAL	3.3k	1% 1/8W
1-214-570-00	s	RES, METAL	3.6k	1% 1/8W
1-214-571-00	s	RES, METAL	3.9k	1% 1/8W
1-214-572-00	s	RES, METAL	4.3k	1% 1/8W
1-214-573-00	s	RES, METAL	4.7k	1% 1/8W
1-214-574-00	s	RES, METAL	5.1k	1% 1/8W
1-214-575-00	s	RES, METAL	5.6k	1% 1/8W
1-214-576-00	s	RES, METAL	6.2k	1% 1/8W
1-214-577-00	s	RES, METAL	6.8k	1% 1/8W
1-214-578-00	s	RES, METAL	7.5k	1% 1/8W
1-214-579-00	s	RES, METAL	8.2k	1% 1/8W
1-214-580-00	s	RES, METAL	9.1k	1% 1/8W
1-214-581-00	s	RES, METAL	10k	1% 1/8W
1-214-582-00	s	RES, METAL	11k	1% 1/8W
1-214-583-00	s	RES, METAL	12k	1% 1/8W
1-214-584-00	s	RES, METAL	13k	1% 1/8W
1-214-585-00	s	RES, METAL	15k	1% 1/8W
1-214-586-00	s	RES, METAL	16k	1% 1/8W
1-214-587-00	s	RES, METAL	18k	1% 1/8W
1-214-588-00	s	RES, METAL	20k	1% 1/8W
1-214-589-00	s	RES, METAL	22k	1% 1/8W
1-214-590-00	s	RES, METAL	24k	1% 1/8W
1-214-591-00	s	RES, METAL	27k	1% 1/8W
1-214-592-00	s	RES, METAL	30k	1% 1/8W
1-214-593-00	s	RES, METAL	33k	1% 1/8W
1-215-819-11	s	RES, METAL	36k	1% 1/8W
1-215-820-11	s	RES, METAL	39k	1% 1/8W
1-215-821-11	s	RES, METAL	43k	1% 1/8W
1-215-822-11	s	RES, METAL	47k	1% 1/8W
1-215-823-11	s	RES, METAL	51k	1% 1/8W
1-215-824-11	s	RES, METAL	56k	1% 1/8W
1-215-825-11	s	RES, METAL	62k	1% 1/8W
1-215-826-11	s	RES, METAL	68k	1% 1/8W
1-215-827-11	s	RES, METAL	75k	1% 1/8W
1-215-828-11	s	RES, METAL	82k	1% 1/8W
1-215-829-11	s	RES, METAL	91k	1% 1/8W
1-215-830-11	s	RES, METAL	100k	1% 1/8W

Part No. SP Description

RESISTOR, CHIP

1/10W

0 - 3.3M (E12) +5% 1/10W

1-216-295-00	s	RES, CHIP	0	5%	1/10W
1-216-298-00	s	RES, CHIP	2.2	5%	1/10W
1-216-302-00	s	RES, CHIP	2.7	5%	1/10W
1-216-304-00	s	RES, CHIP	3.3	5%	1/10W
1-216-306-00	s	RES, CHIP	3.9	5%	1/10W

1-216-308-00	s	RES, CHIP	4.7	5%	1/10W
1-216-309-00	s	RES, CHIP	5.6	5%	1/10W
1-216-311-00	s	RES, CHIP	6.8	5%	1/10W
1-216-313-00	s	RES, CHIP	8.2	5%	1/10W
1-216-001-00	s	RES, CHIP	10	5%	1/10W

1-216-003-00	s	RES, CHIP	12	5%	1/10W
1-216-005-00	s	RES, CHIP	15	5%	1/10W
1-216-007-00	s	RES, CHIP	18	5%	1/10W
1-216-009-00	s	RES, CHIP	22	5%	1/10W
1-216-011-00	s	RES, CHIP	27	5%	1/10W

1-216-013-00	s	RES, CHIP	33	5%	1/10W
1-216-015-00	s	RES, CHIP	39	5%	1/10W
1-216-017-00	s	RES, CHIP	47	5%	1/10W
1-216-019-00	s	RES, CHIP	56	5%	1/10W
1-216-021-00	s	RES, CHIP	68	5%	1/10W

1-216-023-00	s	RES, CHIP	82	5%	1/10W
1-216-025-00	s	RES, CHIP	100	5%	1/10W
1-216-027-00	s	RES, CHIP	120	5%	1/10W
1-216-029-00	s	RES, CHIP	150	5%	1/10W
1-216-031-00	s	RES, CHIP	180	5%	1/10W

1-216-033-00	s	RES, CHIP	220	5%	1/10W
1-216-035-00	s	RES, CHIP	270	5%	1/10W
1-216-037-00	s	RES, CHIP	330	5%	1/10W
1-216-039-00	s	RES, CHIP	390	5%	1/10W
1-216-041-00	s	RES, CHIP	470	5%	1/10W

1-216-043-00	s	RES, CHIP	560	5%	1/10W
1-216-045-00	s	RES, CHIP	680	5%	1/10W
1-216-047-00	s	RES, CHIP	820	5%	1/10W
1-216-049-00	s	RES, CHIP	1k	5%	1/10W
1-216-051-00	s	RES, CHIP	1.2k	5%	1/10W

1-216-053-00	s	RES, CHIP	1.5k	5%	1/10W
1-216-055-00	s	RES, CHIP	1.8k	5%	1/10W
1-216-057-00	s	RES, CHIP	2.2k	5%	1/10W
1-216-059-00	s	RES, CHIP	2.7k	5%	1/10W
1-216-061-00	s	RES, CHIP	3.3k	5%	1/10W

1-216-063-00	s	RES, CHIP	3.9k	5%	1/10W
1-216-065-00	s	RES, CHIP	4.7k	5%	1/10W
1-216-067-00	s	RES, CHIP	5.6k	5%	1/10W
1-216-069-00	s	RES, CHIP	6.8k	5%	1/10W
1-216-071-00	s	RES, CHIP	8.2k	5%	1/10W

1-216-073-00	s	RES, CHIP	10k	5%	1/10W
1-216-075-00	s	RES, CHIP	12k	5%	1/10W
1-216-077-00	s	RES, CHIP	15k	5%	1/10W
1-216-079-00	s	RES, CHIP	18k	5%	1/10W
1-216-081-00	s	RES, CHIP	22k	5%	1/10W

Part No. SP Description

1-216-083-00	s	RES, CHIP	27k	5%	1/10W
1-216-085-00	s	RES, CHIP	33k	5%	1/10W
1-216-087-00	s	RES, CHIP	39k	5%	1/10W
1-216-089-00	s	RES, CHIP	47k	5%	1/10W
1-216-091-00	s	RES, CHIP	56k	5%	1/10W

1-216-093-00	s	RES, CHIP	68k	5%	1/10W
1-216-095-00	s	RES, CHIP	82k	5%	1/10W
1-216-097-00	s	RES, CHIP	100k	5%	1/10W
1-216-099-00	s	RES, CHIP	120k	5%	1/10W
1-216-101-00	s	RES, CHIP	150k	5%	1/10W

1-216-103-00	s	RES, CHIP	180k	5%	1/10W
1-216-105-00	s	RES, CHIP	220k	5%	1/10W
1-216-107-00	s	RES, CHIP	270k	5%	1/10W
1-216-109-00	s	RES, CHIP	330k	5%	1/10W
1-216-111-00	s	RES, CHIP	390k	5%	1/10W

1-216-113-00	s	RES, CHIP	470k	5%	1/10W
1-216-115-00	s	RES, CHIP	560k	5%	1/10W
1-216-117-00	s	RES, CHIP	680k	5%	1/10W
1-216-119-00	s	RES, CHIP	820k	5%	1/10W
1-216-121-00	s	RES, CHIP	1.0M	5%	1/10W

1-216-123-00	s	RES, CHIP	1.2M	5%	1/10W
1-216-125-00	s	RES, CHIP	1.5M	5%	1/10W
1-216-127-00	s	RES, CHIP	1.8M	5%	1/10W
1-216-129-00	s	RES, CHIP	2.2M	5%	1/10W
1-216-131-00	s	RES, CHIP	2.7M	5%	1/10W

1-216-133-00	s	RES, CHIP	3.3M	5%	1/10W
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Part No.	SP	Description	Part No.	SP	Description
CONNECTOR, RECEPTACLE (STRAIGHT TYPE)			1-506-477-11	o	RECEPTACLE 12P MALE (STRAIGHT TYPE)
CONNECTOR, RECEPTACLE (ANGLE TYPE)			1-506-491-11	o	RECEPTACLE 12P MALE (ANGLE TYPE)
CONNECTOR, HOUSING			1-562-157-11	o	HOUSING 12P
CONNECTOR, CONTACT AWG24-30/AWG32			1-563-088-11	o	CONTACT AWG24-30
			1-563-089-11	o	CONTACT AWG32
2P - 15P			1-506-478-11	o	RECEPTACLE 13P MALE (STRAIGHT TYPE)
1-506-467-11	o	RECEPTACLE 2P MALE (STRAIGHT TYPE)	1-506-492-11	o	RECEPTACLE 13P MALE (ANGLE TYPE)
1-506-481-11	o	RECEPTACLE 2P MALE (ANGLE TYPE)	1-562-627-11	o	HOUSING 13P
1-562-147-11	o	HOUSING 2P	1-563-088-11	o	CONTACT AWG24-30
1-563-088-11	o	CONTACT AWG24-30	1-563-089-11	■	CONTACT AWG32
1-563-089-11	o	CONTACT AWG32	1-506-479-11	■	RECEPTACLE 14P MALE (STRAIGHT TYPE)
1-506-468-11	o	RECEPTACLE 3P MALE (STRAIGHT TYPE)	1-506-493-11	o	RECEPTACLE 14P MALE (ANGLE TYPE)
1-506-482-11	o	RECEPTACLE 3P MALE (ANGLE TYPE)	1-562-185-11	o	HOUSING 14P
1-562-148-11	o	HOUSING 3P	1-563-088-11	■	CONTACT AWG24-30
1-563-088-11	o	CONTACT AWG24-30	1-563-089-11	o	CONTACT AWG32
1-563-089-11	o	CONTACT AWG32	1-506-480-11	o	RECEPTACLE 15P MALE (STRAIGHT TYPE)
1-506-469-11	o	RECEPTACLE 4P MALE (STRAIGHT TYPE)	1-506-494-11	■	RECEPTACLE 15P MALE (ANGLE TYPE)
1-506-483-21	o	RECEPTACLE 4P MALE (ANGLE TYPE)	1-562-958-11	o	HOUSING 15P
1-562-149-11	o	HOUSING 4P	1-563-088-11	o	CONTACT AWG24-30
1-563-088-11	o	CONTACT AWG24-30	1-563-089-11	■	CONTACT AWG32
1-563-089-11	o	CONTACT AWG32			
1-506-470-11	o	RECEPTACLE 5P MALE (STRAIGHT TYPE)			
1-506-484-11	o	RECEPTACLE 5P MALE (ANGLE TYPE)			
1-562-150-11	o	HOUSING 5P			
1-563-088-11	o	CONTACT AWG24-30			
1-563-089-11	o	CONTACT AWG32			
1-506-471-31	o	RECEPTACLE 6P MALE (STRAIGHT TYPE)			
1-506-485-11	o	RECEPTACLE 6P MALE (ANGLE TYPE)			
1-562-151-11	o	HOUSING 6P			
1-563-088-11	■	CONTACT AWG24-30			
1-563-089-11	o	CONTACT AWG32			
1-506-472-11	o	RECEPTACLE 7P MALE (STRAIGHT TYPE)			
1-506-486-11	o	RECEPTACLE 7P MALE (ANGLE TYPE)			
1-562-152-11	o	HOUSING 7P			
1-563-088-11	o	CONTACT AWG24-30			
1-563-089-11	o	CONTACT AWG32			
1-506-473-11	o	RECEPTACLE 8P MALE (STRAIGHT TYPE)			
1-506-487-11	o	RECEPTACLE 8P MALE (ANGLE TYPE)			
1-562-153-11	o	HOUSING 8P			
1-563-088-11	o	CONTACT AWG24-30			
1-563-089-11	■	CONTACT AWG32			
1-506-474-11	o	RECEPTACLE 9P MALE (STRAIGHT TYPE)			
1-506-488-11	o	RECEPTACLE 9P MALE (ANGLE TYPE)			
1-562-154-11	o	HOUSING 9P			
1-563-088-11	o	CONTACT AWG24-30			
1-563-089-11	o	CONTACT AWG32			
1-506-475-11	o	RECEPTACLE 10P MALE (STRAIGHT TYPE)			
1-506-489-11	o	RECEPTACLE 10P MALE (ANGLE TYPE)			
1-562-155-11	o	HOUSING 10P			
1-563-088-11	■	CONTACT AWG24-30			
1-563-089-11	■	CONTACT AWG32			
1-506-476-11	o	RECEPTACLE 11P MALE (STRAIGHT TYPE)			
1-506-490-21	o	RECEPTACLE 11P MALE (ANGLE TYPE)			
1-562-156-11	o	HOUSING 11P			
1-563-088-11	o	CONTACT AWG24-30			
1-563-089-11	■	CONTACT AWG32			

Part No. SP Description

CONNECTOR, RECEPTACLE (STRAIGHT TYPE)
CONNECTOR, RECEPTACLE (ANGLE TYPE)
CONNECTOR, HOUSING
CONNECTOR, CONTACT AWG24-30/AWG32

2P - 15P

1-564-001-11 o RECEPTACLE 2P MALE (STRAIGHT TYPE)
1-564-012-11 o RECEPTACLE 2P MALE (ANGLE TYPE)
1-562-147-11 o HOUSING 2P
1-564-026-21 o CONTACT AWG24-30
1-564-681-21 o CONTACT AWG32

1-564-002-11 o RECEPTACLE 3P MALE (STRAIGHT TYPE)
1-564-013-11 o RECEPTACLE 3P MALE (ANGLE TYPE)
1-562-148-11 o HOUSING 3P
1-564-026-21 o CONTACT AWG24-30
1-564-681-21 o CONTACT AWG32

1-564-003-11 o RECEPTACLE 4P MALE (STRAIGHT TYPE)
1-564-014-11 o RECEPTACLE 4P MALE (ANGLE TYPE)
1-562-149-11 o HOUSING 4P
1-564-026-21 o CONTACT AWG24-30
1-564-681-21 o CONTACT AWG32

1-564-004-11 o RECEPTACLE 5P MALE (STRAIGHT TYPE)
1-564-015-11 o RECEPTACLE 5P MALE (ANGLE TYPE)
1-562-150-11 o HOUSING 5P
1-564-026-21 o CONTACT AWG24-30
1-564-681-21 o CONTACT AWG32

1-564-005-11 o RECEPTACLE 6P MALE (STRAIGHT TYPE)
1-564-016-11 o RECEPTACLE 6P MALE (ANGLE TYPE)
1-562-151-11 o HOUSING 6P
1-564-026-21 o CONTACT AWG24-30
1-564-681-21 o CONTACT AWG32

1-564-006-11 o RECEPTACLE 7P MALE (STRAIGHT TYPE)
1-564-017-11 o RECEPTACLE 7P MALE (ANGLE TYPE)
1-562-152-11 o HOUSING 7P
1-564-026-21 o CONTACT AWG24-30
1-564-681-21 o CONTACT AWG32

1-564-007-11 o RECEPTACLE 8P MALE (STRAIGHT TYPE)
1-564-018-11 o RECEPTACLE 8P MALE (ANGLE TYPE)
1-562-153-11 o HOUSING 8P
1-564-026-21 o CONTACT AWG24-30
1-564-681-21 o CONTACT AWG32

1-564-008-41 o RECEPTACLE 9P MALE (STRAIGHT TYPE)
1-564-019-11 o RECEPTACLE 9P MALE (ANGLE TYPE)
1-562-154-11 o HOUSING 9P
1-564-026-21 o CONTACT AWG24-30
1-564-681-21 o CONTACT AWG32

1-564-009-11 o RECEPTACLE 10P MALE (STRAIGHT TYPE)
1-564-020-11 o RECEPTACLE 10P MALE (ANGLE TYPE)
1-562-155-11 o HOUSING 10P
1-564-026-21 o CONTACT AWG24-30
1-564-681-21 o CONTACT AWG32

1-564-010-21 o RECEPTACLE 11P MALE (STRAIGHT TYPE)
1-564-021-11 o RECEPTACLE 11P MALE (ANGLE TYPE)
1-562-156-11 o HOUSING 11P
1-564-026-21 o CONTACT AWG24-30
1-564-681-21 o CONTACT AWG32

Part No. SP Description

1-564-011-11 o RECEPTACLE 12P MALE
(STRAIGHT TYPE)
1-564-022-11 o RECEPTACLE 12P MALE (ANGLE TYPE)
1-562-157-11 o HOUSING 12P
1-564-026-21 o CONTACT AWG24-30
1-564-681-21 o CONTACT AWG32

1-564-683-11 ■ RECEPTACLE 13P MALE
(STRAIGHT TYPE)
1-564-743-11 o RECEPTACLE 13P MALE (ANGLE TYPE)
1-562-627-11 o HOUSING 13P
1-564-026-21 o CONTACT AWG24-30
1-564-681-21 o CONTACT AWG32

1-564-069-11 o RECEPTACLE 14P MALE
(STRAIGHT TYPE)
1-564-630-11 o RECEPTACLE 14P MALE (ANGLE TYPE)
1-562-185-11 o HOUSING 14P
1-564-026-21 o CONTACT AWG24-30
1-564-681-21 o CONTACT AWG32

1-564-855-11 o RECEPTACLE 15P MALE
(STRAIGHT TYPE)
1-564-877-11 o RECEPTACLE 15P MALE (ANGLE TYPE)
1-562-958-11 o HOUSING 15P
1-564-026-21 o CONTACT AWG24-30
1-564-681-21 o CONTACT AWG32

Ref.No.	Parts No.	SP Description
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AT-52A BOARD

A-7513-770-A	o	MOUNTED CIRCUIT BOARD "AT-52A"
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C18	1-125-446-11	s	DOUBLE LAYERS 0.47F 5.5V
C39	1-163-038-00	s	CERAMIC CHIP 0.1MF 25V

CN1	1-506-731-21	■	RECEPTACLE, 40P MALE
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D1	8-719-100-05	s	1S2837
D2	8-719-100-03	s	1S2835
D3	8-719-100-05	s	1S2837

IC1	1-807-412-12	s	BH-1219A: SONY
IC2	1-807-413-11	s	BH-1220: SONY
IC3	1-807-414-11	s	BH-1221: SONY
IC4	8-759-200-82	s	TC4069UBF: TOSHIBA
IC5	8-759-906-54	s	TLO64CNS: TI
IC6	8-759-208-07	s	TC4051BF HB: TOSHIBA
IC7	8-759-101-12	s	μPC311G2: NEC
IC8	8-759-918-65	s	TL7700CPS: TI
IC9	8-759-204-79	s	TC40H241F: TOSHIBA
IC10	8-759-030-16	s	TLO62ACPS: TI
IC11	8-759-400-89	s	MN1237AD: MATSUSHITA
IC12	8-741-117-90	s	BX-1179: SONY
IC13	8-759-200-82	s	TC4069UBF: TOSHIBA
IC14	8-759-321-30	s	HD6305Y0-D25P: HITACHI
IC16	8-741-117-90	s	BX-1179: SONY

Q1	8-729-100-66	s	2SC1623
Q2	8-729-100-76	s	2SA812
Q3	8-729-100-66	s	2SC1623
Q4	8-729-100-66	s	2SC1623
Q5	8-729-100-66	s	2SC1623
Q6	8-729-100-76	s	2SA812
R39	1-216-686-11	s	METAL CHIP 30K 0.50% 1/10W
R52	1-216-689-91	s	METAL CHIP 39K 0.50% 1/10W
R53	1-216-699-91	s	METAL CHIP 100K 0.50% 1/10W
R54	1-216-691-91	s	METAL CHIP 47K 0.50% 1/10W

RP1	1-235-813-11	s	NETWORK RESISTER
RP2	1-235-813-11	s	NETWORK RESISTER
RP3	1-231-387-21	s	25K

RV1	1-237-035-21	s	METAL 5K
RV2	1-237-034-21	s	METAL 2K

Ref.No.	Parts No.	SP Description
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S1	1-570-602-11	s	SWITCH, DIP
S2	1-570-374-12	s	SWITCH, SLIDE

X1	1-567-192-11	s	4.0MHz
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CN-189 BOARD

1-623-797-12	o	PRINTED CIRCUIT BOARD "CN-189"
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CN1	1-562-743-11	o	RECEPTACLE, 10P
CN104	1-565-050-11	o	RECEPTACLE, 50P MALE

DR-72 BOARD

A-7513-757-A	o	MOUNTED CIRCUIT BOARD "DR-72"
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C48	1-124-555-11	s	ELECT 1000 20% 16V
C69	1-124-122-11	s	ELECT 100MF 20% 35V

CN2	1-563-238-11	o	RECEPTACLE, 15P
CN3	1-563-292-11	o	RECEPTACLE, 30P FEMALE

D1	8-719-100-03	s	1S2835
D2	8-719-100-03	s	1S2835
D3	8-719-100-05	s	1S2837
D4	8-719-100-05	s	1S2837
D5	8-719-100-05	s	1S2837

D6	8-719-100-05	s	1S2837
D7	8-719-100-05	s	1S2837
D8	8-719-100-05	s	1S2837
D9	8-719-100-05	s	1S2837
D10	8-719-101-23	s	1SS123

D11	8-719-100-03	s	1S2835
D12	8-719-100-03	s	1S2835
D13	8-719-100-03	s	1S2835
D14	8-719-100-03	s	1S2835
D15	8-719-100-05	s	1S2837

D16	8-719-100-05	s	1S2837
D17	8-719-100-03	s	1S2835
D18	8-719-100-03	s	1S2835
D19	8-719-100-03	s	1S2835
D20	8-719-100-03	s	1S2835

D21	8-719-100-05	s	1S2837
D22	8-719-100-05	s	1S2837
D23	8-719-100-05	s	1S2837

Ref.No. Parts No. SP Description

Q1 8-729-100-66 s 2SC1623
Q3 8-729-112-65 s 2SA1462
Q4 8-729-112-65 s 2SA1462
Q6 8-729-100-66 s 2SC1623
Q7 8-729-100-76 s 2SA812

Q8 8-729-100-66 s 2SC1623
Q9 8-729-100-66 s 2SC1623
Q10 8-729-100-76 s 2SA812
Q11 8-729-100-76 s 2SA812
Q12 8-729-802-45 s 2SK125-5

Q13 8-729-100-66 s 2SC1623
Q14 8-729-100-66 s 2SC1623
Q15 8-729-100-66 s 2SC1623
Q16 8-729-100-66 s 2SC1623
Q17 8-729-100-66 s 2SC1623

Q18 8-729-100-66 s 2SC1623
Q19 8-729-100-66 s 2SC1623
Q20 8-729-100-66 s 2SC1623
Q21 8-729-100-66 s 2SC1623

R25 1-216-686-91 s METAL CHIP 30K 0.50% 1/10W
R26 1-216-695-91 s METAL CHIP 68K 0.50% 1/10W
R83 1-216-005-00 s RES, CHIP 15 5% 1/10W
R87 1-216-083-00 s RES, CHIP 27K 5% 1/10W
R88 1-216-083-00 s RES, CHIP 27K 5% 1/10W

R89 1-216-083-00 s RES, CHIP 27K 5% 1/10W
R90 1-216-057-00 s RES, CHIP 2.2K 5% 1/10W

RV1 1-237-037-21 s METAL 20K
RV2 1-237-037-21 s METAL 20K
RV3 1-237-037-21 s METAL 20K

EN-69/69P BOARD

A-7513-618-A s MOUNTED CIRCUIT BOARD
"EN-69"
A-7513-619-A s MOUNTED CIRCUIT BOARD
"EN-69P"

C9 1-107-042-11 s MICA 2.2PF +0.5PF 500V
C10 1-107-040-11 s MICA 1.5PF +0.5PF 500V
C19 1-162-881-11 s CERAMIC 150PF 5% 50V(J,UC)
1-162-876-11 s CERAMIC 75PF 5% 50V(EK)
C20 1-162-873-11 s CERAMIC 56PF 5% 50V(J,UC)
1-107-075-00 s MICA 39PF 5% 50V(EK)
C26 1-107-043-11 s MICA 2.7PF +0.5PF 500V
C27 1-107-043-11 s MICA 2.7PF +0.5PF 500V
C28 1-107-043-11 s MICA 2.7PF +0.5PF 500V
C41 1-107-042-11 s MICA 2.2PF +0.5PF 500V
C51 1-162-752-11 s CERAMIC 91PF 5% 50V
C52 1-162-710-11 s CERAMIC 100PF 5% 50V(J,UC)
1-162-871-11 s CERAMIC 47PF 5% 50V(EK)

Ref.No. Parts No. SP Description

C53 1-107-047-11 s MICA 5.6PF +0.5PF 500V
(J,UC)

1-107-206-00 s MICA 15PF 5% 500V(EK)
C54 1-107-075-11 s MICA 39PF 5% 50V(J,UC)
1-162-876-11 s CERAMIC 75PF 5% 50V(EK)
C69 1-107-075-11 s MICA 39PF 5% 50V(J,UC)
1-162-879-11 s CERAMIC 100PF 5% 50V(EK)
C70 1-107-211-11 s MICA 24PF 5% 500V(J,UC)
1-162-884-11 s CERAMIC 270PF 5% 50V(EK)
C71 1-162-752-11 s CERAMIC 91PF 5% 50V(J,UC)

C74 1-124-286-00 s ELECT(NONPOLAR) 33 20% 16V
C77 1-107-159-11 s MICA 33PF 5% 500V(J,UC)
1-107-202-11 s MICA 10PF 5% 500V(J,UC)
1-107-209-11 s MICA 20PF 5% 500V(J,UC)
C78 1-162-888-11 s CERAMIC 560PF 5% 50V(J,UC)
1-162-879-11 s CERAMIC 100PF 5% 50V(EK)
C79 1-162-881-11 s CERAMIC 150PF 5% 50V(J,UC)
1-162-884-11 s CERAMIC 270PF 5% 50V(EK)
C82 1-124-286-00 s ELECT(NONPOLAR) 33 20% 16V

C94 1-124-292-11 s ELECT 33MF 20% 6.3V
C98 1-107-042-11 s MICA 2.2PF +0.5PF 500V
C102 1-107-158-00 s MICA 30PF 5% 500V(EK)

CN1 1-506-730-11 s RECEPTACLE, 40P MALE

CV1 1-141-298-11 s CERAMIC TRIMMER 10P

D1 8-719-101-23 s 1SS123(J,UC)
D2 8-719-914-11 s HZ4ALL
D3 8-719-101-23 s 1SS123
D4 8-719-100-05 s 1S2837
D5 8-719-100-05 s 1S2837

DL1 1-415-482-11 s 790+10nS(J,UC)
1-415-483-11 s 338+7nS(EK)
DL2 1-415-290-11 s 0.41uS+10nS(J,UC)

FL1 1-235-161-12 s BAND PASS 3.5MHz(J,UC)
1-235-181-00 s BAND PASS 4.43MHz(EK)

IC1 8-759-200-81 s TC4053BF: TOSHIBA
IC2 1-807-421-11 s BH-1216: SONY
IC3 8-741-135-60 s BX-1356: SONY
IC4 8-759-906-59 s CX22017: SONY
IC5 8-759-200-79 s TC4049BF: TOSHIBA

Ref.No.	Parts No.	SP Description
IC6	8-759-911-77	s CX-7968A: SONY
IC7	1-807-421-11	s BH-1216: SONY
IC8	1-807-419-11	s BH-1214: SONY
IC9	1-807-418-11	s BH-1213: SONY
IC10	1-807-420-12	s BH-1215A: SONY
IC11	1-807-423-11	s BH-1218: SONY
IC12	8-759-700-07	s NJM2903M: JRC
IC13	8-759-200-79	s TC4049BF: TOSHIBA

L1	1-408-417-21	s 47 μ H
L2	1-408-417-21	s 47 μ H
L3	1-408-417-21	s 47 μ H
L4	1-408-427-00	s 330 μ H(J,UC)
	1-408-419-00	s 68 μ H(EK)
L5	1-408-145-11	s 19 μ H(J,UC)
L6	1-408-851-11	s 560 μ H(J,UC)
	1-408-419-00	s 68 μ H(EK)

LV1	1-408-844-11	s 22 μ H
LV2	1-408-845-11	s 100 μ H(J,UC)
	1-410-619-11	s 220 μ H(EK)

Q1	8-729-100-76	s 2SA812
Q2	8-729-100-76	s 2SA812
Q3	8-729-100-76	s 2SA812
Q4	8-729-100-66	s 2SC1623
Q5	8-729-100-66	s 2SC1623

Q6	8-729-100-66	s 2SC1623
Q7	8-729-100-66	s 2SC1623
Q8	8-729-100-76	s 2SA812
Q9	8-729-100-66	s 2SC1623
Q10	8-729-100-66	s 2SC1623

Q11	8-729-100-66	s 2SC1623
Q12	8-729-100-66	s 2SC1623
Q13	8-729-100-66	s 2SC1623
Q14	8-729-100-66	s 2SC1623
Q15	8-729-100-76	s 2SA812

Q16	8-729-100-66	s 2SC1623
Q17	8-729-100-66	s 2SC1623
Q18	8-729-100-66	s 2SC1623
Q19	8-729-100-66	s 2SC1623
Q20	8-729-100-76	s 2SA812

Q21	8-729-100-66	s 2SC1623
Q22	8-729-100-66	s 2SC1623(J,UC)
Q23	8-729-175-73	s 2SC2757(J,UC)
Q24	8-729-100-66	s 2SC1623(J,UC)
Q25	8-729-122-63	s 2SA1226

Ref.No.	Parts No.	SP Description
Q26	8-729-100-66	s 2SC1623
Q27	8-729-175-73	s 2SC2757
Q28	8-729-100-66	s 2SC1623
Q29	8-729-122-63	s 2SA1226
Q30	8-729-100-76	s 2SA812
Q31	8-729-100-66	s 2SC1623
Q32	8-729-100-76	s 2SA812
Q33	8-729-100-76	s 2SA812
Q34	8-729-100-66	s 2SC1623
Q35	8-729-100-66	s 2SC1623

R46	1-216-644-91	s METAL CHIP 510 0.50% 1/10W (J,UC)
	1-216-642-11	s METAL CHIP 430 0.50% 1/10W (EK)
R47	1-216-644-91	s METAL CHIP 510 0.50% 1/10W (J,UC)
	1-216-642-11	s METAL CHIP 430 0.50% 1/10W (EK)
R69	1-216-653-91	s METAL CHIP 1.2K 0.50% 1/10W
R70	1-216-655-91	s METAL CHIP 1.5K 0.50% 1/10W
R109	1-216-669-91	s METAL CHIP 5.6K 0.50% 1/10W (J,UC)
	1-216-654-11	s METAL CHIP 1.3K 0.50% 1/10W (EK)
R131	1-216-652-91	s METAL CHIP 1.1K 0.50% 1/10W (J,UC)
	1-216-699-11	s METAL CHIP 100K 0.50% 1/10W (EK)
R133	1-216-663-91	s METAL CHIP 3.3K 0.50% 1/10W (J,UC)
	1-216-664-11	s METAL CHIP 3.6K 0.50% 1/10W (EK)
R134	1-216-670-91	s METAL CHIP 6.2K 0.50% 1/10W (J,UC)

RP1	1-235-528-12	s RES, NETWORK
RP2	1-235-528-12	s RES, NETWORK
RP3	1-235-526-11	s RES, NETWORK
RP4	1-235-527-11	s RES, NETWORK
RP5	1-235-529-11	s RES, NETWORK(J,UC)
	1-235-526-11	s RES, NETWORK(EK)

RP6	1-235-530-11	s RES, NETWORK(J,UC)
RP7	1-235-527-11	s RES, NETWORK(EK)

Ref.No.	Parts No.	SP Description
RV1	1-228-457-11	s METAL 2K(J,UC)
RV2	1-228-459-11	s METAL 10K
RV3	1-228-459-11	■ METAL 10K(J,UC)
RV4	1-228-456-11	s METAL 1K
RV5	1-228-456-11	s METAL 1K
RV6	1-228-457-11	s METAL 2K
RV7	1-228-457-11	■ METAL 2K
RV8	1-228-457-11	s METAL 2K
RV9	1-228-459-11	■ METAL 10K(J,UC)
RV10	1-228-457-11	s METAL 2K(J,UC)
RV11	1-228-459-11	s METAL 10K
RV12	1-228-456-11	s METAL 1K
RV13	1-228-473-11	s METAL 5K
RV14	1-228-457-11	s METAL 2K
RV15	1-228-460-11	s METAL 20K(J,UC)
	1-228-459-11	s METAL 10K(EK)
RV16	1-228-460-11	s METAL 20K(J,UC)
RV17	1-228-454-11	s METAL 200
RV18	1-228-454-11	s METAL 200
RV19	1-228-473-11	s METAL 5K
RV20	1-228-457-11	■ METAL 2K(J,UC)
	1-228-456-11	s METAL 1K(EK)
RV21	1-228-473-11	s METAL 5K
RV22	1-228-457-11	s METAL 2K
RV23	1-228-457-11	s METAL 2K
S1	1-570-857-11	s SLIDE
S2	1-570-857-11	s SLIDE
S3	1-570-857-11	s SLIDE

Ref.No.	Parts No.	SP Description
HN-101 BOARD		
	A-7513-771-A	o MOUNTED CIRCUIT BOARD "HN-101"
	1-939-724-11	o HARNESS (AT 8P)
CN1	1-563-239-21	■ RECEPTACLE, 40P FEMALE
CN2	1-563-239-11	o RECEPTACLE, 40P FEMALE
CN3	1-563-239-11	o RECEPTACLE, 40P FEMALE
CN4	1-563-239-11	■ RECEPTACLE, 40P FEMALE
CN5	1-563-239-11	o RECEPTACLE, 40P FEMALE
CN6	1-563-239-11	■ RECEPTACLE, 40P FEMALE
CN7	1-563-239-21	o RECEPTACLE, 40P FEMALE
CN8	1-506-635-11	o RECEPTACLE, 12P MALE
	1-563-120-11	o PLUG HOUSING, 12P
	1-563-115-11	o PLUG CONTACT
CN20	1-506-639-11	■ RECEPTACLE, 20P MALE
	1-563-124-11	■ PLUG HOUSING, 20P
	1-563-115-11	o PLUG CONTACT
CN27	1-506-638-11	o RECEPTACLE, 18P MALE
	1-563-123-11	■ PLUG HOUSING, 18P
	1-563-115-11	o PLUG CONTACT
D1	8-719-911-19	s 1SS119
D2	8-719-911-19	s 1SS119
D3	8-719-911-19	s 1SS119
D4	8-719-911-19	s 1SS119
IC1	8-759-403-48	s AN6701S: MATSUSHITA

Ref.No. Parts No. SP Description

IE-24/24P BOARD

A-7513-762-A o MOUNTED CIRCUIT BOARD
"IE-24"
A-7513-763-A o MOUNTED CIRCUIT BOARD
"IE-24P"

C2 1-126-157-11 s ELECT 10MF 20% 16V
C3 1-126-157-11 s ELECT 10MF 20% 16V
C5 1-126-157-11 s ELECT 10MF 20% 10V
C10 1-107-202-00 s MICA 10PF 5% 500V

C12 1-126-157-11 s ELECT 10MF 20% 16V
C16 1-107-159-11 s MICA 33PF 5% 500V
C19 1-107-159-11 s MICA 33PF 5% 500V
C20 1-107-202-00 s MICA 10PF 5% 500V
C27 1-126-157-11 s ELECT 10MF 20% 16V

C31 1-107-159-11 s MICA 33PF 5% 500V
C34 1-107-159-11 s MICA 33PF 5% 500V
C37 1-107-208-11 s MICA 18PF 5% 500V
C42 1-161-896-21 s CERAMIC 0.22MF 50V
C43 1-161-896-21 s CERAMIC 0.22MF 50V

C44 1-124-270-11 s ELECT 0.47MF 20% 50V
C45 1-124-270-11 s ELECT 0.47MF 20% 50V
C46 1-161-896-21 s CERAMIC 0.22MF 50V
C47 1-124-270-11 s ELECT 0.47MF 20% 50V
C48 1-124-270-11 s ELECT 0.47MF 20% 50V

C49 1-126-157-11 s ELECT 10MF 20% 16V
C50 1-126-157-11 s ELECT 10MF 20% 16V
C51 1-126-157-11 s ELECT 10MF 20% 16V
C52 1-126-157-11 s ELECT 10MF 20% 16V
C53 1-126-157-11 s ELECT 10MF 20% 16V

C55 1-126-157-11 s ELECT 10MF 20% 16V
C64 1-126-157-11 s ELECT 10MF 20% 16V
C67 1-126-157-11 s ELECT 10MF 20% 16V
C71 1-124-442-00 s ELECT 330MF 20% 6.3V
C72 1-163-250-91 s CERAMIC CHIP 91PF 5% 50V

C76 1-161-896-21 s CERAMIC 0.22MF 50V
C77 1-126-157-11 s ELECT 10MF 20% 16V
C79 1-107-075-11 s MICA 39PF 5% 50V
C84 1-130-471-11 s MYLAR 0.001MF 5% 50V
C85 1-130-471-11 s MYLAR 0.001MF 5% 50V

C86 1-130-471-11 s MYLAR 0.001MF 5% 50V
C87 1-130-471-11 s MYLAR 0.001MF 5% 50V
C98 1-126-157-11 s ELECT 10MF 20% 16V
C99 1-124-584-00 s ELECT 100MF 20% 10V
C101 1-131-349-00 s TANTALUM 2.2MF 10% 25V

C103 1-131-349-00 s TANTALUM 2.2MF 10% 25V
C108 1-126-157-11 s ELECT 10MF 20% 16V
C110 1-126-157-11 s ELECT 10MF 20% 16V
C112 1-126-157-11 s ELECT 10MF 20% 16V
C114 1-126-157-11 s ELECT 10MF 20% 16V

C115 1-126-157-11 s ELECT 10MF 20% 16V
C117 1-126-157-11 s ELECT 10MF 20% 16V
C120 1-131-349-00 s TANTALUM 2.2MF 10% 25V
C122 1-163-117-00 s CERAMIC CHIP 100PF 5% 50V
C123 1-163-038-00 s CERAMIC CHIP 0.1MF 25V

Ref.No. Parts No. SP Description

CN1 1-506-730-11 s RECEPTACLE, 40P MALE

CV1 1-141-301-11 s CERAMIC TRIMMER 35P
CV2 1-141-291-11 s CERAMIC TRIMMER 20P
CV3 1-141-291-11 s CERAMIC TRIMMER 20P

D1 8-719-101-23 s 1SS123
D2 8-719-100-03 s 1S2835
D3 8-719-100-03 s 1S2835
D4 8-719-101-97 s 1SS97-1
D5 8-719-101-97 s 1SS97-1

D6 8-719-815-59 s 1S1555-S
D7 8-719-100-03 s 1S2835
D8 8-719-101-97 s 1SS97
D9 8-719-101-97 s 1SS97-1
D10 8-719-101-23 s 1SS123

DL1 1-415-580-11 s LINE-1 63.556μH±10nS(J,UC)
LINE-2 63.556μH±20nS
1-415-591-21 s LINE-1 64.000μS±10nS(EK)
LINE-2 64.000μS±20nS
DL2 1-415-485-11 s 120nS±6nS
DL3 1-415-408-11 s 50nS, 100nS
DL4 1-415-502-11 s 100nS

IC1 8-759-700-95 s NJM1496M: JRC
IC2 1-807-416-11 s BH-1211: SONY
IC3 1-807-416-11 s BH-1211: SONY
IC4 8-759-030-16 s TL062ACPS: TI
IC5 1-807-422-11 s BH-1217: SONY

IC6 8-759-030-16 s TL062ACPS: TI
IC7 8-759-700-95 s NJM1496M: JRC
IC8 8-759-200-90 s TC4538BF: TOSHIBA
IC9 8-759-200-90 s TC4538BF: TOSHIBA
IC10 8-759-200-68 s TC4011BF: TOSHIBA

L1 1-408-417-21 s 47μH
L4 1-408-421-21 s 100μH
L5 1-408-117-11 s 10μH
L6 1-408-170-11 s 18μH
L7 1-408-421-21 s 100μH
L8 1-408-421-21 s 100μH

LV1 1-408-845-11 s 100μH

Ref.No. Parts No. SP Description

Q1 8-729-122-63 s 2SA1226
Q2 8-729-175-73 s 2SC2757
Q3 8-729-122-63 s 2SA1226
Q4 8-729-175-73 s 2SC2757
Q5 8-729-175-73 s 2SC2757

Q6 8-729-109-42 s 2SK94-X2
Q7 8-729-175-73 s 2SC2757
Q8 8-729-175-73 s 2SC2757
Q9 8-729-175-73 s 2SC2757
Q10 8-729-175-73 s 2SC2757

Q11 8-729-175-73 s 2SC2757
Q12 8-729-100-66 s 2SC1623
Q13 8-729-175-73 s 2SC2757
Q14 8-729-122-63 s 2SA1226
Q15 8-729-175-73 s 2SC2757

Q16 8-729-175-73 s 2SC2757
Q17 8-729-175-73 s 2SC2757
Q18 8-729-109-42 s 2SK94-X2
Q19 8-729-175-73 s 2SC2757
Q20 8-729-175-73 s 2SC2757

Q21 8-729-175-73 s 2SC2757
Q22 8-729-175-73 s 2SC2757
Q23 8-729-175-73 s 2SC2757
Q24 8-729-122-63 s 2SA1226
Q25 8-729-109-42 s 2SK94-X2

Q26 8-729-109-42 s 2SK94-X2
Q27 8-729-122-63 s 2SA1226
Q28 8-729-122-63 s 2SA1226
Q29 8-729-109-42 s 2SK94-X2
Q30 8-729-109-42 s 2SK94-X2

Q31 8-729-122-63 s 2SA1226
Q32 8-729-122-63 s 2SA1226
Q33 8-729-122-63 s 2SA1226
Q34 8-729-122-63 s 2SA1226
Q35 8-729-122-63 s 2SA1226

Q36 8-729-122-63 s 2SA1226
Q37 8-729-175-73 s 2SC2757
Q38 8-729-109-42 s 2SK94-X2
Q39 8-729-109-42 s 2SK94-X2
Q41 8-729-175-73 s 2SC2757

Q42 8-729-175-73 s 2SC2757
Q43 8-729-175-73 s 2SC2757
Q44 8-729-109-42 s 2SK94-X2
Q45 8-729-109-42 s 2SK94-X2
Q46 8-729-175-73 s 2SC2757

Q47 8-729-175-73 s 2SC2757
Q48 8-729-122-63 s 2SA1226
Q49 8-729-122-63 s 2SA1226
Q50 8-729-122-63 s 2SA1226
Q51 8-729-122-63 s 2SA1226

Q52 8-729-122-63 s 2SA1226
Q53 8-729-175-73 s 2SC2757
Q54 8-729-175-73 s 2SC2757
Q55 8-729-175-73 s 2SC2757
Q56 8-729-122-63 s 2SA1226

Ref.No. Parts No. SP Description

Q57 8-729-122-63 s 2SA1226
Q63 8-729-100-66 s 2SA812
Q65 8-729-122-63 s 2SA1226
Q66 8-729-100-66 s 2SC1623
Q67 8-729-100-66 s 2SC1623

Q68 8-729-175-73 s 2SC2757
Q69 8-729-175-73 s 2SC2757
Q70 8-729-100-66 s 2SC1623
Q71 8-729-175-73 s 2SC2757
Q72 8-729-122-63 s 2SA1226

Q73 8-729-122-63 s 2SA1226
Q74 8-729-100-66 s 2SC1623
Q75 8-729-100-66 s 2SC1623
Q76 8-729-100-66 s 2SC1623

R7 1-216-627-91 s METAL CHIP 100 0.50% 1/10W
R8 1-216-669-91 s METAL CHIP 5.6K 0.50% 1/10W
R10 1-216-647-91 s METAL CHIP 680 0.50% 1/10W
R12 1-216-099-00 s RES, CHIP 120K 5% 1/10W
R13 1-216-641-91 s METAL CHIP 390 0.50% 1/10W

R14 1-216-663-91 s METAL CHIP 3.3K 0.50% 1/10W
R28 1-216-631-91 s METAL CHIP 150 0.50% 1/10W
R29 1-216-651-91 s METAL CHIP 1K 0.50% 1/10W
R32 1-216-634-91 s METAL CHIP 200 0.50% 1/10W
R33 1-216-658-91 s METAL CHIP 2K 0.50% 1/10W

R34 1-216-651-91 s METAL CHIP 1K 0.50% 1/10W
R45 1-216-639-91 s METAL CHIP 330 0.50% 1/10W
R59 1-216-651-91 s METAL CHIP 1K 0.50% 1/10W
R60 1-216-631-91 s METAL CHIP 150 0.50% 1/10W
R63 1-216-651-91 s METAL CHIP 1K 0.50% 1/10W

R79 1-216-658-91 s METAL CHIP 2K 0.50% 1/10W
R80 1-216-651-91 s METAL CHIP 1K 0.50% 1/10W
R81 1-216-658-91 s METAL CHIP 2K 0.50% 1/10W
R82 1-216-643-91 s METAL CHIP 470 0.50% 1/10W
R88 1-216-644-91 s METAL CHIP 510 0.50% 1/10W

R89 1-216-644-91 s METAL CHIP 510 0.50% 1/10W
R91 1-216-644-91 s METAL CHIP 510 0.50% 1/10W
R93 1-216-651-91 s METAL CHIP 1K 0.50% 1/10W
R94 1-216-658-91 s METAL CHIP 2K 0.50% 1/10W
R96 1-216-295-00 s RES, CHIP 0.5% 1/10W

R108 1-216-675-91 s METAL CHIP 10K 0.50% 1/10W
R109 1-216-659-91 s METAL CHIP 2.2K 0.50% 1/10W
R110 1-216-659-91 s METAL CHIP 2.2K 0.50% 1/10W
R127 1-216-667-91 s METAL CHIP 4.7K 0.50% 1/10W
R128 1-216-667-91 s METAL CHIP 4.7K 0.50% 1/10W

R129 1-216-651-91 s METAL CHIP 1K 0.50% 1/10W
R147 1-216-675-91 s METAL CHIP 10K 0.50% 1/10W
R148 1-216-675-91 s METAL CHIP 10K 0.50% 1/10W
R158 1-216-651-91 s METAL CHIP 1K 0.50% 1/10W
R161 1-216-682-91 s METAL CHIP 20K 0.50% 1/10W

R162 1-216-689-91 s METAL CHIP 39K 0.50% 1/10W
R163 1-216-679-91 s METAL CHIP 15K 0.50% 1/10W
R164 1-216-681-91 s METAL CHIP 18K 0.50% 1/10W
R179 1-216-644-91 s METAL CHIP 510 0.50% 1/10W
R184 1-216-644-91 s METAL CHIP 510 0.50% 1/10W

Ref.No. Parts No. SP Description

R185 1-216-644-91 s METAL CHIP 510 0.50% 1/10W
 R186 1-216-644-91 s METAL CHIP 510 0.50% 1/10W
 R187 1-216-664-91 s METAL CHIP 3.6K 0.50% 1/10W
 R188 1-216-656-91 s METAL CHIP 1.6K 0.50% 1/10W
 R190 1-216-057-00 s RES, CHIP 2.2K 5% 1/10W

R191 1-216-657-91 s METAL CHIP 1.8K 0.50% 1/10W
 R193 1-216-681-11 s METAL CHIP 18K 0.5% 1/10W
 R195 1-216-658-91 s METAL CHIP 2K 0.50% 1/10W
 R197 1-216-639-91 s METAL CHIP 330 0.50% 1/10W
 R198 1-216-639-91 s METAL CHIP 330 0.50% 1/10W

R199 1-216-689-91 s METAL CHIP 39K 0.50% 1/10W
 R202 1-216-655-91 s METAL CHIP 1.5K 0.50% 1/10W
 R203 1-216-633-91 s METAL CHIP 180 0.50% 1/10W
 R206 1-216-651-91 s METAL CHIP 1K 0.50% 1/10W
 R210 1-216-633-91 s METAL CHIP 180 0.50% 1/10W

R216 1-216-113-00 s RES, CHIP 470K 5% 1/10W
 R217 1-216-075-00 s RES, CHIP 12K 5% 1/10W
 R218 1-216-643-11 s METAL CHIP 470 0.5% 1/10W

RV1 1-228-457-11 s METAL 2K
 RV2 1-228-455-11 s METAL 500
 RV3 1-228-458-00 s METAL 5K
 RV4 1-228-471-11 s METAL 1K
 RV5 1-228-474-11 s METAL 10K

RV6 1-228-458-11 s METAL 5K
 RV7 1-228-472-11 s METAL 2K
 RV8 1-228-470-11 s METAL 500
 RV9 1-228-457-11 s METAL 2K
 RV11 1-228-455-11 s METAL 500
 RV12 1-228-458-11 s METAL 5K

S1 1-570-610-11 s TOGGLE
 S2 1-570-857-11 s SLIDE

MP-19 BOARD

SER. NO

{ 10001 ~ 10130 : UC }
 { 30001 ~ 30090 : J }
 { 40001 ~ 40050 : EK }

RV1 1-223-165-00 s WIREWOUND 10K

Ref.No. Parts No. SP Description

PA-86 BOARD

A-7513-758-A ■ MOUNTED CIRCUIT BOARD
 "PA-86"

C4 1-163-235-91 s CERAMIC CHIP 22PF 5% 50V
 C10 1-163-103-00 s CERAMIC CHIP 27PF 5% 50V
 C17 1-163-235-91 s CERAMIC CHIP 22PF 5% 50V
 C21 1-163-113-00 s CERAMIC CHIP 68PF 5% 50V
 C29 1-163-235-91 s CERAMIC CHIP 22PF 5% 50V

C34 1-163-101-00 s CERAMIC CHIP 22PF 5% 50V
 C46 1-124-473-11 s ELECT 1000MF 20% 10V
 C47 1-163-090-00 s CERAMIC CHIP 7PF +0.25PF 50V
 C48 1-163-117-00 s CERAMIC CHIP 100PF 5% 50V
 C50 1-163-125-00 s CERAMIC CHIP 220PF 5% 50V

C51 1-163-091-00 s CERAMIC CHIP 8PF +0.25PF 50V
 C52 1-163-121-00 s CERAMIC CHIP 150PF 5% 50V

CN3 1-563-238-11 o RECEPTACLE, 15P FEMALE

FL1 1-236-184-11 s TRAP 14.3MHz
 FL2 1-236-184-11 s TRAP 14.3MHz
 FL3 1-236-184-11 s TRAP 14.3MHz

Q1 8-729-122-63 s 2SA1226
 Q2 8-765-930-10 s 3SK163-2
 Q3 8-729-100-66 s 2SC1623
 Q4 8-729-122-63 s 2SA1226
 Q5 8-765-930-10 s 3SK163-2

Q6 8-729-802-80 s 2SC3661
 Q7 8-729-122-63 s 2SA1226
 Q8 8-765-930-10 s 3SK163-2
 Q9 8-729-802-80 s 2SC3661
 Q10 8-729-175-72 s 2SC2757-T33

Q11 8-729-100-66 s 2SC1623
 Q12 8-729-175-72 s 2SC2757-T33
 Q13 8-729-100-66 s 2SC1623
 Q14 8-765-930-10 s 3SK163-2
 Q15 8-729-175-72 s 2SC2757-T33

Q16 8-729-122-63 s 2SA1226
 Q17 8-765-930-10 s 3SK163-2
 Q18 8-729-100-66 s 2SC1623
 Q19 8-729-122-63 s 2SA1226
 Q20 8-765-930-10 s 3SK163-2

Q21 8-729-802-80 s 2SC3661
 Q22 8-729-122-63 s 2SA1226
 Q23 8-765-930-10 s 3SK163-2
 Q24 8-729-802-80 s 2SC3661
 Q25 8-729-175-72 s 2SC2757-T33

Q26 8-729-100-66 s 2SC1623
 Q27 8-729-175-72 s 2SC2757-T33
 Q28 8-729-100-66 s 2SC1623
 Q29 8-765-930-10 s 3SK163-2
 Q30 8-729-175-72 s 2SC2757-T33

Ref.No. Parts No. SP Description

Q31 8-729-100-76 s 2SA812
Q32 8-729-122-63 s 2SA1226
Q33 8-765-930-10 s 3SK163-2
Q34 8-729-100-66 s 2SC1623
Q35 8-729-122-63 s 2SA1226

Q36 8-765-930-10 s 3SK163-2
Q37 8-729-100-66 s 2SC1623
Q39 8-729-122-63 s 2SA1226
Q40 8-765-930-10 s 3SK163-2
Q41 8-729-100-66 s 2SC1623

Q43 8-765-930-10 s 3SK163-2
Q44 8-729-175-72 s 2SC2757-T33
Q45 8-729-100-66 s 2SC1623
Q46 8-729-175-72 s 2SC2757-T33
Q47 8-729-100-66 s 2SC1623

Q48 8-729-175-72 s 2SC2757-T33
Q49 8-729-122-63 s 2SA1226
Q50 8-765-930-10 s 3SK163-2
Q51 8-729-802-80 s 2SC3661
Q52 8-729-122-63 s 2SA1226

Q53 8-765-930-10 s 3SK163-2
Q54 8-729-802-80 s 2SC3661
Q55 8-729-117-54 s 2SA1175
Q56 8-729-100-76 s 2SA812
Q57 8-729-117-54 s 2SA1175

R1 1-216-643-91 s METAL CHIP 470 0.50% 1/10W
R13 1-216-651-91 s METAL CHIP 1K 0.50% 1/10W
R20 1-216-651-91 s METAL CHIP 1K 0.50% 1/10W
R21 1-216-099-00 s RES, CHIP 120K 5% 1/10W
R22 1-216-643-91 s METAL CHIP 470 0.50% 1/10W

R23 1-216-655-91 s METAL CHIP 1.5K 0.50% 1/10W
R26 1-216-603-91 s METAL CHIP 10 0.50% 1/10W
R29 1-216-655-91 s METAL CHIP 1.5K 0.50% 1/10W
R31 1-216-643-91 s METAL CHIP 470 0.50% 1/10W
R43 1-216-651-91 s METAL CHIP 1K 0.50% 1/10W

R48 1-216-651-91 s METAL CHIP 1K 0.50% 1/10W
R49 1-216-655-91 s METAL CHIP 1.5K 0.50% 1/10W
R50 1-216-691-11 s METAL CHIP 47K 0.5% 1/10W
R51 1-216-635-91 s METAL CHIP 220 0.50% 1/10W
R54 1-216-655-91 s METAL CHIP 1.5K 0.50% 1/10W

R55 1-216-603-91 s METAL CHIP 10 0.50% 1/10W
R60 1-216-665-91 s METAL CHIP 3.9K 0.50% 1/10W
R61 1-216-643-91 s METAL CHIP 470 0.50% 1/10W
R74 1-216-651-91 s METAL CHIP 1K 0.50% 1/10W
R78 1-216-651-91 s METAL CHIP 1K 0.50% 1/10W

R82 1-216-655-91 s METAL CHIP 1.5K 0.50% 1/10W
R83 1-216-105-00 s RES, CHIP 220K 5% 1/10W
R84 1-216-643-91 s METAL CHIP 470 0.50% 1/10W
R87 1-216-655-91 s METAL CHIP 1.5K 0.50% 1/10W
R88 1-216-603-91 s METAL CHIP 10 0.50% 1/10W

R101 1-216-664-91 s METAL CHIP 3.6K 0.50% 1/10W
R104 1-216-670-91 s METAL CHIP 6.2K 0.50% 1/10W
R107 1-216-675-91 s METAL CHIP 10K 0.50% 1/10W
R113 1-216-699-11 s METAL CHIP 100K 0.5% 1/10W
R115 1-216-691-11 s METAL CHIP 47K 0.5% 1/10W

Ref.No. Parts No. SP Description

RV1 1-237-042-11 s CERMET 1M
RV2 1-237-042-11 s CERMET 1M
RV3 1-237-042-11 s CERMET 1M

PR-121/121P BOARD

A-7513-765-A o MOUNTED CIRCUIT BOARD
"PR-121" (J)
A-7513-941-A o MOUNTED CIRCUIT BOARD
"PR-121" (UC)
A-7513-766-A ■ MOUNTED CIRCUIT BOARD
"PR-121P" (EK)

C5 1-124-499-11 s ELECT 1MF 20% 50V
C6 1-163-809-91 s CERAMIC CHIP 0.047MF 10%
25V

C7 1-126-151-11 s ELECT 4.7MF 20% 16V
C9 1-135-093-95 s TANTAL CHIP 10MF 10% 16V
C11 1-135-093-21 s TANTAL CHIP 10MF 10% 10V

C18 1-135-093-95 s TANTAL CHIP 10MF 10% 16V
C20 1-135-076-95 s TANTAL CHIP 1MF 10% 35V
C21 1-135-076-95 s TANTAL CHIP 1MF 10% 35V
C25 1-124-270-11 s ELECT 0.47MF 20% 50V
C26 1-124-270-11 s ELECT 0.47MF 20% 50V

C28 1-135-093-95 s TANTAL CHIP 10MF 10% 16V
C30 1-135-093-21 s TANTAL CHIP 10MF 10% 10V
C31 1-135-088-95 s TANTAL CHIP 2.2MF 10% 20V
C35 1-124-499-11 s ELECT 1MF 20% 50V
C36 1-163-809-91 s CERAMIC CHIP 0.047MF 10%
25V

C37 1-126-151-11 s ELECT 4.7MF 20% 16V
C39 1-163-111-00 s CERAMIC CHIP 56PF 5% 50V
C40 1-135-076-95 s TANTAL CHIP 1MF 10% 35V
C41 1-124-270-11 s ELECT 0.47MF 20% 50V
C45 1-135-093-95 s TANTAL CHIP 10MF 10% 16V

C47 1-135-076-95 s TANTAL CHIP 1MF 10% 35V
C48 1-135-076-95 s TANTAL CHIP 1MF 10% 35V
C52 1-124-270-11 s ELECT 0.47MF 20% 50V
C53 1-124-270-11 s ELECT 0.47MF 20% 50V
C55 1-135-093-95 s TANTAL CHIP 10MF 10% 16V

C57 1-135-093-21 s TANTAL CHIP 10MF 10% 10V
C60 1-124-499-11 s ELECT 1MF 20% 50V
C61 1-163-809-91 s CERAMIC CHIP 0.047MF 10%
25V

C62 1-126-151-11 s ELECT 4.7MF 20% 16V
C64 1-135-093-95 s TANTAL CHIP 10MF 10% 16V

C65 1-135-093-21 s TANTAL CHIP 10MF 10% 10V
C74 1-135-093-95 s TANTAL CHIP 10MF 10% 16V
C76 1-135-076-95 s TANTAL CHIP 1MF 10% 35V
C77 1-135-076-95 s TANTAL CHIP 1MF 10% 35V
C81 1-124-270-11 s ELECT 0.47MF 20% 50V

C82 1-124-270-11 s ELECT 0.47MF 20% 50V
C84 1-135-093-95 s TANTAL CHIP 10MF 10% 16V
C86 1-135-093-21 s TANTAL CHIP 10MF 10% 10V
C99 1-124-589-11 s ELECT 47MF 20% 10V
C103 1-131-377-00 s TANTALUM 10MF 10% 10V

Ref.No.	Parts No.	SP Description
C108	1-102-953-00	s CERAMIC 18PF 5% 50V
C109	1-102-953-00	s CERAMIC 18PF 5% 50V
C110	1-102-951-21	s CERAMIC 15PF 5% 50V
C111	1-135-076-21	s TANTAL 1MF 10% 35V
CN1	1-506-730-11	o RECEPTACLE, 40P MALE
CV1	1-141-331-21	s TRIMMER {CHIP} 30PF
CV2	1-141-331-21	s TRIMMER {CHIP} 30PF
CV3	1-141-331-21	s TRIMMER {CHIP} 30PF
D1	8-719-101-23	s 1SS123
D2	8-719-948-47	s HSM88AS
D3	8-719-948-47	s HSM88AS
D4	8-719-815-59	s 1S1555-S
D5	8-719-815-59	s 1S1555-S
D6	8-719-815-59	s 1S1555-S
D7	8-719-815-59	s 1S1555-S
D8	8-719-942-31	s HZ3ALL
D9	8-719-101-23	s 1SS123
D10	8-719-100-03	s 1S2835
D11	8-719-948-47	s HSM88AS
D12	8-719-948-47	s HSM88AS
D13	8-719-815-59	s 1S1555-S
D14	8-719-815-59	s 1S1555-S
D15	8-719-815-59	s 1S1555-S
D16	8-719-815-59	s 1S1555-S
D17	8-719-942-31	s HZ3ALL
D18	8-719-101-23	s 1SS123
D19	8-719-101-23	s 1SS123
D20	8-719-948-47	s HSM88AS
D21	8-719-948-47	s HSM88AS
D22	8-719-815-59	s 1S1555-S
D23	8-719-815-59	s 1S1555-S
D24	8-719-815-59	s 1S1555-S
D25	8-719-815-59	s 1S1555-S
D26	8-719-942-31	s HZ3ALL
D28	8-719-100-05	s 1S2837
D29	8-719-100-03	s 1S2835
D30	8-719-101-23	s 1SS123
D32	8-719-101-23	s 1SS123
D33	8-719-101-23	s 1SS123
D34	8-719-101-23	s 1SS123
D35	8-719-815-59	s 1S1555-S
		Ser No.10001 - 10060(UC)
		Ser No.30001 - 30040(J)
	8-719-101-23	s 1SS123
		Ser No.10061 - {UC}
		Ser No.30041 - {J}
		Ser No.40001 - {EK}
DL1	1-415-489-11	s 160nS+8nS
DL2	1-415-490-11	s 180nS+9nS
DL3	1-415-489-11	s 160nS+8nS

Ref.No.	Parts No.	SP Description
IC1	1-807-422-11	s BH-1217: SONY
IC2	8-759-030-16	s TL062ACPS: TI
IC3	8-759-700-95	s NJM1496M: JRC
IC4	8-759-100-94	s UPC358G2: NEC
IC5	8-759-700-95	s NJM1496M: JRC
IC6	1-807-422-11	s BH-1217: SONY
IC7	8-759-030-16	s TL062ACPS: TI
IC8	1-807-422-11	s BH-1217: SONY
IC9	8-759-030-16	s TL062ACPS: TI
IC10	8-759-030-16	s TL062ACPS: TI
IC11	8-759-700-95	s NJM1496M: JRC
IC12	1-807-422-11	s BH-1217: SONY
IC13	1-807-422-11	s BH-1217: SONY
Q1	8-729-100-66	s 2SC1623
Q2	8-729-122-63	s 2SA1226
Q3	8-729-109-44	s 2SK94-X3
Q4	8-729-402-19	s XN6501
Q5	8-729-403-32	s XN6534
Q6	8-729-122-63	s 2SA1226
Q7	8-729-122-63	s 2SA1226
Q8	8-729-175-72	s 2SC2757-T33
Q9	8-729-175-72	s 2SC2757-T33
Q10	8-729-175-72	s 2SC2757-T33
Q11	8-729-175-72	s 2SC2757-T33
Q12	8-729-122-63	s 2SA1226
Q13	8-729-122-63	s 2SA1226
Q14	8-729-100-66	s 2SC1623
Q15	8-729-100-66	s 2SC1623
Q16	8-765-420-06	s 2SK300
Q17	8-729-175-72	s 2SC2757-T33
Q18	8-729-122-63	s 2SA1226
Q19	8-729-122-63	s 2SA1226
Q20	8-729-109-44	s 2SK94-X3
Q21	8-729-403-29	s XN6435
Q22	8-729-403-29	s XN6435
Q23	8-729-403-32	s XN6534
Q24	8-729-403-29	s XN6435
Q25	8-729-403-29	s XN6435
Q26	8-729-122-63	s 2SA1226
Q27	8-729-100-66	s 2SC1623
Q28	8-729-122-63	s 2SA1226
Q29	8-729-109-44	s 2SK94-X3
Q30	8-729-175-72	s 2SC2757-T33
Q31	8-729-403-32	s XN6534
Q32	8-729-403-29	s XN6435
Q33	8-729-122-63	s 2SA1226
Q34	8-729-122-63	s 2SA1226
Q35	8-729-175-72	s 2SC2757-T33

Ref.No.	Parts No.	SP	Description
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Q36	8-729-175-72	s	2SC2757-T33
Q37	8-729-175-72	s	2SC2757-T33
Q38	8-729-175-72	s	2SC2757-T33
Q39	8-729-122-63	s	2SA1226
Q40	8-729-100-66	s	2SC1623

Q41	8-729-122-63	s	2SA1226
Q42	8-729-100-66	s	2SC1623
Q43	8-765-420-06	s	2SK300
Q44	8-729-175-72	s	2SC2757-T33
Q45	8-729-122-63	s	2SA1226

Q46	8-729-122-63	s	2SA1226
Q47	8-729-109-44	s	2SK94-X3
Q48	8-729-403-29	s	XN6435
Q49	8-729-403-29	s	XN6435
Q50	8-729-403-32	s	XN6534

Q51	8-729-403-29	s	XN6435
Q52	8-729-403-29	s	XN6435
Q53	8-729-100-66	s	2SC1623
Q54	8-729-109-44	s	2SK94-X3
Q55	8-729-402-19	s	XN6501

Q56	8-729-403-32	s	XN6534
Q57	8-729-175-72	s	2SC2757-T33
Q58	8-729-122-63	s	2SA1226
Q59	8-729-122-63	s	2SA1226
Q60	8-729-175-72	s	2SC2757-T33

Q61	8-729-175-72	s	2SC2757-T33
Q62	8-729-175-72	s	2SC2757-T33
Q63	8-729-122-63	s	2SA1226
Q64	8-729-100-66	s	2SC1623
Q65	8-729-122-63	s	2SA1226

Q66	8-729-100-66	s	2SC1623
Q67	8-765-420-06	s	2SK300
Q68	8-729-175-72	s	2SC2757-T33
Q69	8-729-122-63	s	2SA1226
Q70	8-729-122-63	s	2SA1226

Q71	8-729-109-44	s	2SK94-X3
Q72	8-729-403-29	s	XN6435
Q73	8-729-403-29	s	XN6435
Q74	8-729-403-32	s	XN6534
Q75	8-729-403-29	s	XN6435

Q76	8-729-403-29	s	XN6435
Q78	8-729-175-72	s	2SC2757-T33
Q79	8-729-175-72	s	2SC2757-T33
Q80	8-729-100-66	s	2SC1623
Q81	8-729-403-32	s	XN6534

Q82	8-729-175-72	s	2SC2757-T33
Q83	8-729-175-72	s	2SC2757-T33
Q84	8-729-100-66	s	2SC1623
Q85	8-729-403-32	s	XN6534
Q86	8-729-175-72	s	2SC2757-T33

Ref.No.	Parts No.	SP	Description
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Q87	8-729-100-66	s	2SC1623
Q88	8-729-175-72	s	2SC2757-T33
Q89	8-729-403-32	s	XN6534
Q90	8-729-175-72	s	2SC2757-T33
Q91	8-729-122-63	s	2SA1226

Q92	8-729-175-72	s	2SC2757-T33
Q93	8-729-122-63	s	2SA1226
Q94	8-729-175-72	s	2SC2757-T33
Q95	8-729-175-72	s	2SC2757-T33
Q96	8-729-109-44	s	2SK94-X3

Q97	8-729-109-44	s	2SK94-X3
Q98	8-729-122-63	s	2SA1226
Q99	8-729-122-63	s	2SA1226
Q100	8-729-122-63	s	2SA1226
Q101	8-729-122-63	s	2SA1226

Q102	8-729-175-72	s	2SC2757-T33
Q103	8-729-122-63	s	2SA1226
Q104	8-729-175-72	s	2SC2757-T33
Q105	8-729-175-72	s	2SC2757-T33

R4	1-216-644-91	s	METAL CHIP 510 0.50% 1/10W
R5	1-216-644-91	s	METAL CHIP 510 0.50% 1/10W
R7	1-216-643-91	s	METAL CHIP 470 0.50% 1/10W
R8	1-216-651-91	s	METAL CHIP 1K 0.50% 1/10W
R9	1-216-661-91	s	METAL CHIP 2.7K 0.50% 1/10W
R9	1-216-659-11	s	METAL CHIP 2.2K 0.5% 1/10W

R10	1-216-661-91	s	METAL CHIP 2.7K 0.50% 1/10W
R11	1-216-070-00	s	RES, CHIP 7.5K 5% 1/10W
R12	1-216-663-91	s	METAL CHIP 3.3K 0.50% 1/10W
R14	1-216-667-91	s	METAL CHIP 4.7K 0.50% 1/10W
R16	1-216-675-91	s	METAL CHIP 10K 0.50% 1/10W

R17	1-216-671-91	s	METAL CHIP 6.8K 0.50% 1/10W
R18	1-216-679-91	s	METAL CHIP 15K 0.50% 1/10W
R19	1-216-687-91	s	METAL CHIP 33K 0.50% 1/10W
R20	1-216-683-91	s	METAL CHIP 22K 0.50% 1/10W
R21	1-216-681-91	s	METAL CHIP 18K 0.50% 1/10W

R22	1-216-677-91	s	METAL CHIP 12K 0.50% 1/10W
R23	1-216-669-91	s	METAL CHIP 5.6K 0.50% 1/10W
R24	1-216-673-91	s	METAL CHIP 8.2K 0.50% 1/10W
R41	1-216-687-91	s	METAL CHIP 33K 0.50% 1/10W
R42	1-216-687-91	s	METAL CHIP 33K 0.50% 1/10W

R43	1-216-658-91	s	METAL CHIP 2K 0.50% 1/10W
R45	1-216-675-91	s	METAL CHIP 10K 0.50% 1/10W
R46	1-216-675-91	s	METAL CHIP 10K 0.50% 1/10W
R47	1-216-673-91	s	METAL CHIP 8.2K 0.50% 1/10W
R48	1-216-679-91	s	METAL CHIP 15K 0.50% 1/10W

R49	1-216-675-91	s	METAL CHIP 10K 0.50% 1/10W
R50	1-216-686-91	s	METAL CHIP 30K 0.50% 1/10W
R55	1-216-649-91	s	METAL CHIP 820 0.50% 1/10W
R56	1-216-666-91	s	METAL CHIP 4.3K 0.50% 1/10W
R57	1-216-675-91	s	METAL CHIP 10K 0.50% 1/10W

Ref.No.	Parts No.	SP Description
R58	1-216-699-91	s METAL CHIP 100K 0.50% 1/10W
R59	1-216-699-91	s METAL CHIP 100K 0.50% 1/10W
R60	1-216-639-91	s METAL CHIP 330 0.50% 1/10W
R62	1-216-639-91	s METAL CHIP 330 0.50% 1/10W
R63	1-216-645-91	s METAL CHIP 560 0.50% 1/10W
R64	1-216-669-91	s METAL CHIP 5.6K 0.50% 1/10W
R72	1-216-651-91	s METAL CHIP 1K 0.50% 1/10W
R73	1-216-651-91	s METAL CHIP 1K 0.50% 1/10W
R75	1-216-642-91	s METAL CHIP 430 0.50% 1/10W
R76	1-216-619-01	s METAL CHIP 47 0.50% 1/10W
R78	1-216-675-01	s METAL CHIP 10K 0.50% 1/10W
R79	1-216-683-91	s METAL CHIP 22K 0.50% 1/10W
R80	1-216-627-01	s METAL CHIP 100 0.50% 1/10W
R81	1-216-627-01	s METAL CHIP 100 0.50% 1/10W
R86	1-216-663-91	s METAL CHIP 3.3K 0.50% 1/10W
R87	1-216-669-91	s METAL CHIP 5.6K 0.50% 1/10W
R89	1-216-671-91	s METAL CHIP 6.8K 0.50% 1/10W
R94	1-215-469-51	s METAL 100K 1% 1/6W
R95	1-216-687-91	s METAL CHIP 33K 0.50% 1/10W
R103	1-216-643-91	s METAL CHIP 470 0.50% 1/10W
R104	1-216-669-91	s METAL CHIP 5.6K 0.50% 1/10W
R105	1-216-644-91	s METAL CHIP 510 0.50% 1/10W
R110	1-216-644-91	s METAL CHIP 510 0.50% 1/10W
R111	1-216-644-91	s METAL CHIP 510 0.50% 1/10W
R113	1-216-643-91	s METAL CHIP 470 0.50% 1/10W
R114	1-216-651-91	s METAL CHIP 1K 0.50% 1/10W
R115	1-216-661-91	s METAL CHIP 2.7K 0.50% 1/10W
R116	1-216-661-91	s METAL CHIP 2.7K 0.50% 1/10W
R117	1-216-070-00	s RES, CHIP 7.5K 5% 1/10W
R118	1-216-663-91	s METAL CHIP 3.3K 0.50% 1/10W
R120	1-216-667-91	s METAL CHIP 4.7K 0.50% 1/10W
R122	1-216-675-01	s METAL CHIP 10K 0.50% 1/10W
R123	1-216-671-91	s METAL CHIP 6.8K 0.50% 1/10W
R124	1-216-687-91	s METAL CHIP 33K 0.50% 1/10W
R125	1-216-687-91	s METAL CHIP 33K 0.50% 1/10W
R126	1-216-663-91	s METAL CHIP 3.3K 0.50% 1/10W
R132	1-216-658-91	s METAL CHIP 2K 0.50% 1/10W
R138	1-216-633-91	s METAL CHIP 180 0.50% 1/10W
R139	1-216-679-91	s METAL CHIP 15K 0.50% 1/10W
R140	1-216-130-91	s METAL GLAZE 2.4M 5% 1/10W
R141	1-216-130-91	s METAL GLAZE 2.4M 5% 1/10W
R142	1-216-651-91	s METAL CHIP 1K 0.50% 1/10W
R143	1-216-651-91	s METAL CHIP 1K 0.50% 1/10W
R145	1-216-673-91	s METAL CHIP 8.2K 0.50% 1/10W
R146	1-216-679-91	s METAL CHIP 15K 0.50% 1/10W
R147	1-216-675-91	s METAL CHIP 10K 0.50% 1/10W
R148	1-216-686-91	s METAL CHIP 30K 0.50% 1/10W
R153	1-216-649-91	s METAL CHIP 820 0.50% 1/10W

Ref.No.	Parts No.	SP Description
R154	1-216-675-91	s METAL CHIP 10K 0.50% 1/10W
R155	1-216-666-91	s METAL CHIP 4.3K 0.50% 1/10W
R156	1-216-699-91	s METAL CHIP 100K 0.50% 1/10W
R157	1-216-699-91	s METAL CHIP 100K 0.50% 1/10W
R158	1-216-639-91	s METAL CHIP 330 0.50% 1/10W
R160	1-216-639-91	s METAL CHIP 330 0.50% 1/10W
R161	1-216-645-91	s METAL CHIP 560 0.50% 1/10W
R162	1-216-669-91	s METAL CHIP 5.6K 0.50% 1/10W
R170	1-216-651-91	s METAL CHIP 1K 0.50% 1/10W
R171	1-216-651-91	s METAL CHIP 1K 0.50% 1/10W
R173	1-216-642-91	s METAL CHIP 430 0.50% 1/10W
R174	1-216-619-91	s METAL CHIP 47 0.50% 1/10W
R176	1-216-675-91	s METAL CHIP 10K 0.50% 1/10W
R178	1-216-627-91	s METAL CHIP 100 0.50% 1/10W
R179	1-216-627-91	s METAL CHIP 100 0.50% 1/10W
R183	1-216-663-91	s METAL CHIP 3.3K 0.50% 1/10W
R185	1-216-669-91	s METAL CHIP 5.6K 0.50% 1/10W
R186	1-216-671-91	s METAL CHIP 6.8K 0.50% 1/10W
R198	1-216-643-91	s METAL CHIP 470 0.50% 1/10W
R199	1-216-669-91	s METAL CHIP 5.6K 0.50% 1/10W
R200	1-216-644-91	s METAL CHIP 510 0.50% 1/10W
R204	1-216-644-91	s METAL CHIP 510 0.50% 1/10W
R205	1-216-644-91	s METAL CHIP 510 0.50% 1/10W
R207	1-216-643-91	s METAL CHIP 470 0.50% 1/10W
R208	1-216-651-91	s METAL CHIP 1K 0.50% 1/10W
R209	1-216-661-91	s METAL CHIP 2.7K 0.50% 1/10W
R210	1-216-661-91	s METAL CHIP 2.7K 0.50% 1/10W
R211	1-216-070-00	s RES, CHIP 7.5K 5% 1/10W
R212	1-216-663-91	s METAL CHIP 3.3K 0.50% 1/10W
R215	1-216-675-91	s METAL CHIP 10K 0.50% 1/10W
R216	1-216-671-91	s METAL CHIP 6.8K 0.50% 1/10W
R217	1-216-667-91	s METAL CHIP 4.7K 0.50% 1/10W
R218	1-216-679-91	s METAL CHIP 15K 0.50% 1/10W
R219	1-216-687-91	s METAL CHIP 33K 0.50% 1/10W
R220	1-216-683-91	s METAL CHIP 22K 0.50% 1/10W
R221	1-216-681-91	s METAL CHIP 18K 0.50% 1/10W
R222	1-216-677-91	s METAL CHIP 12K 0.50% 1/10W
R223	1-216-669-91	s METAL CHIP 5.6K 0.50% 1/10W
R224	1-216-673-91	s METAL CHIP 8.2K 0.50% 1/10W
R241	1-216-687-91	s METAL CHIP 33K 0.50% 1/10W
R242	1-216-687-91	s METAL CHIP 33K 0.50% 1/10W
R243	1-216-658-91	s METAL CHIP 2K 0.50% 1/10W
R244	1-216-669-91	s METAL CHIP 5.6K 0.50% 1/10W
R249	1-216-669-91	s METAL CHIP 5.6K 0.50% 1/10W
R250	1-216-685-91	s METAL CHIP 27K 0.50% 1/10W
R251	1-216-693-91	s METAL CHIP 56K 0.50% 1/10W
R252	1-216-673-91	s METAL CHIP 8.2K 0.50% 1/10W
R253	1-216-679-91	s METAL CHIP 15K 0.50% 1/10W
R254	1-216-675-91	s METAL CHIP 10K 0.50% 1/10W

Ref.No.	Parts No.	SP Description	Ref.No.	Parts No.	SP Description
R255	1-216-686-91	s METAL CHIP 30K 0.50% 1/10W	RV11	1-228-474-11	s METAL 10K
R260	1-216-649-91	s METAL CHIP 820 0.50% 1/10W	RV12	1-228-472-11	s METAL 2K
R261	1-216-666-91	s METAL CHIP 4.3K 0.50% 1/10W	RV13	1-237-035-41	s METAL 5K
R262	1-216-675-91	s METAL CHIP 10K 0.50% 1/10W	RV14	1-237-034-41	s METAL 2K
R263	1-216-699-91	s METAL CHIP 100K 0.50% 1/10W	RV15	1-237-034-41	s METAL 2K
R264	1-216-699-91	s METAL CHIP 100K 0.50% 1/10W	RV16	1-237-033-11	s CERMET 1K
R265	1-216-639-91	s METAL CHIP 330 0.50% 1/10W	RV17	1-228-474-11	s METAL 10K
R267	1-216-639-91	s METAL CHIP 330 0.50% 1/10W	RV18	1-237-032-11	s CERMET 500
R268	1-216-639-11	s METAL CHIP 330 0.5% 1/10W	RV19	1-237-031-41	s METAL 200
R269	1-216-669-91	s METAL CHIP 5.6K 0.50% 1/10W	RV20	1-228-473-11	s METAL 5K
R277	1-216-651-91	s METAL CHIP 1K 0.50% 1/10W	RV21	1-228-474-11	s METAL 10K
R278	1-216-651-91	s METAL CHIP 1K 0.50% 1/10W	RV22	1-237-035-41	s METAL 5K
R280	1-216-642-91	s METAL CHIP 430 0.50% 1/10W	RV23	1-237-035-41	s METAL 5K
R281	1-216-619-91	s METAL CHIP 47 0.50% 1/10W	RV24	1-237-033-41	s METAL 1K
R283	1-216-675-91	s METAL CHIP 10K 0.50% 1/10W	RV25	1-237-034-41	s METAL 2K
R284	1-216-683-91	s METAL CHIP 22K 0.50% 1/10W	RV26	1-237-033-11	s CERMET 1K
R286	1-216-627-91	s METAL CHIP 100 0.50% 1/10W	RV27	1-228-474-11	s METAL 10K
R287	1-216-627-91	s METAL CHIP 100 0.50% 1/10W	RV28	1-237-032-11	s CERMET 500
R291	1-216-663-91	s METAL CHIP 3.3K 0.50% 1/10W	RV29	1-237-035-41	s METAL 5K
R293	1-216-669-91	s METAL CHIP 5.6K 0.50% 1/10W	RV30	1-237-035-41	s METAL 5K
R294	1-216-671-91	s METAL CHIP 6.8K 0.50% 1/10W	RV31	1-237-035-41	s METAL 5K
R306	1-216-643-91	s METAL CHIP 470 0.50% 1/10W	RV32	1-237-035-41	s METAL 5K
R307	1-216-669-91	s METAL CHIP 5.6K 0.50% 1/10W	RV33	1-237-035-41	s METAL 5K
R308	1-216-644-91	s METAL CHIP 510 0.50% 1/10W	RV34	1-237-035-41	s METAL 5K
R341	1-216-699-91	s METAL CHIP 100K 0.50% 1/10W	RV35	1-228-473-11	s METAL 5K
R342	1-216-689-91	s METAL CHIP 39K 0.50% 1/10W	RV36	1-228-473-11	s METAL 5K
R343	1-216-689-91	s METAL CHIP 39K 0.50% 1/10W	RV37	1-228-473-11	s METAL 5K
R344	1-216-094-00	s RES, CHIP 75K 5% 1/10W	RV38	1-237-034-41	s METAL 2K
R352	1-216-655-91	s METAL CHIP 1.5K 0.50% 1/10W			
R353	1-216-667-91	s METAL CHIP 4.7K 0.50% 1/10W			
R354	1-216-659-91	s METAL CHIP 2.2K 0.50% 1/10W	S1	1-570-610-11	s TOGGLE
R356	1-216-653-91	s METAL CHIP 1.2K 0.50% 1/10W	S3,4	1-554-076-11	s SLIDE
R357	1-216-653-91	s METAL CHIP 1.2K 0.50% 1/10W			Ser No.10001 - 10060(UC)
R358	1-216-653-91	s METAL CHIP 1.2K 0.50% 1/10W			30001 - 30040(J)
R360	1-216-659-91	s METAL CHIP 2.2K 0.50% 1/10W		1-570-857-11	s SLIDE
					Ser No.10061 - (UC)
					30041 - (J)
					40001 - (EK)
R362	1-216-679-91	s METAL CHIP 15K 0.50% 1/10W			
R363	1-216-621-11	s METAL CHIP 56 0.5% 1/10W			
R364	1-216-621-11	s METAL CHIP 56 0.5% 1/10W			
R370	1-216-675-91	s METAL CHIP 10K 0.50% 1/10W			
RV1	1-237-031-41	s METAL 200	TH1	1-806-627-31	s THERMISTOR (POSITIVE) 1K
RV2	1-228-473-11	s METAL 5K	TH2	1-806-627-31	s THERMISTOR (POSITIVE) 1K
RV3	1-228-474-11	s METAL 10K	TH3	1-806-627-31	s THERMISTOR (POSITIVE) 1K
RV4	1-237-035-41	s METAL 5K			
RV5	1-237-033-41	s METAL 1K			
RV6	1-237-034-41	s METAL 2K			
RV7	1-237-033-11	s CERMET 1K			
RV8	1-228-474-11	s METAL 10K			
RV9	1-237-032-11	s CERMET 500			
RV10	1-237-031-41	s METAL 200			

Ref.No. Parts No. SP Description

PS-173 BOARD

A-7513-767-A o MOUNTED CIRCUIT BOARD
"PS-173"

C4 1-162-722-11 s CERAMIC 330PF 5% 50V
C5 1-124-479-11 s ELECT 330MF 20% 25V
C6 1-127-519-11 s ELECT(SOLID) 100MF 20% 20V
C7 1-136-173-11 s FILM 0.47MF 5% 50V
C8 1-136-173-11 s FILM 0.47MF 5% 50V

C9 1-127-519-11 s ELECT(SOLID) 100MF 20% 20V
C11 1-127-519-11 s ELECT(SOLID) 100MF 20% 20V
C12 1-127-519-11 s ELECT(SOLID) 100MF 20% 20V
C18 1-130-483-11 s MYLAR 0.01MF 5% 50V
C19 1-131-583-11 s TANTALUM 150MF 20% 20V

C20 1-124-140-11 s ELECT 220MF 20% 10V
C21 1-124-120-11 s ELECT 220MF 20% 25V
C22 1-127-515-11 s ELECT(SOLID) 47 20% 10V
C25 1-127-518-11 s ELECT(SOLID) 100 20% 16V
C26 1-127-515-11 s ELECT(SOLID) 47 20% 10V

C27 1-127-518-11 s ELECT(SOLID) 100 20% 16V
C33 1-126-157-11 s ELECT 10MF 20% 16V
C37 1-124-273-11 s ELECT 3.3MF 20% 50V
C39 1-124-270-11 s ELECT 0.47MF 20% 50V
C40 1-124-499-11 s ELECT 1MF 20% 50V

C42 1-124-168-11 s ELECT 100MF 20% 16V
C43 1-126-157-11 s ELECT 10MF 20% 16V
C44 1-126-157-11 s ELECT 10MF 20% 16V
C47 1-126-157-11 s ELECT 10MF 20% 16V
C48 1-124-766-00 s ELECT 0.1MF 20% 50V

C51 1-127-519-11 s ELECT(SOLID) 100MF 20% 20V
C56 1-162-724-11 s CERAMIC 390PF 5% 50V

CN1 1-506-730-11 o RECEPTACLE, 40P MALE

AD2 8-719-118-38 s 1S246A
D3 8-719-982-04 s ERB81-004
D4 8-719-101-23 s 1SS123
D5 8-719-101-23 s 1SS123
D6 8-719-942-31 s HZ3ALL

D7 8-719-911-55 s U05G
D9 8-719-100-05 s 1S2837
D10 8-719-101-23 s 1SS123
D11 8-719-908-06 s ERA81-005
D12 8-719-908-06 s ERA81-005

D13 8-719-908-06 s ERA81-005
D14 8-719-908-06 s ERA81-005
D15 8-719-908-06 s ERA81-005
D16 8-719-908-06 s ERA81-005
D17 8-719-908-06 s ERA81-005

D18 8-719-908-06 s ERA81-005
D19 8-719-951-13 s HZ5CLL
D20 8-719-951-13 s HZ5CLL
D21 8-719-101-97 s 1SS97
D22 8-719-910-68 s HZ6C2L

Ref.No. Parts No. SP Description

D23 8-719-100-05 s 1S2837
D24 8-719-100-05 s 1S2837
D26 8-719-951-13 s HZ5CLL
D27 8-719-101-23 s 1SS123
D28 8-719-101-23 s 1SS123
D31 8-719-815-55 s 1S1555

IC1 8-759-914-04 s TL494CNS: TI
IC2 8-759-701-01 s NJM2904M: JRC
IC3 8-759-701-01 s NJM2904M: JRC
IC4 8-759-906-54 s TL064CNS: TI
IC5 8-759-605-18 s CX-518: SONY

IC6 8-759-701-01 s NJM2904M: JRC
IC7 8-759-200-81 s TC40538F: TOSHIBA

L1 1-408-142-11 s 22.5uH
L2 1-408-549-11 s 150uH
L3 1-421-013-21 s HORIZONTAL CHOKE 25uH
L4 1-421-013-21 s HORIZONTAL CHOKE 25uH
L5 1-408-427-21 s 330uH

L6 1-408-423-21 s 150uH
L7 1-421-013-21 s HORIZONTAL CHOKE 25uH
L8 1-421-013-21 s HORIZONTAL CHOKE 25uH
L9 1-408-429-21 s 470uH

Q3 8-729-113-33 s 2SB733-4
Q4 8-729-113-33 s 2SB733-4
Q8 8-729-271-23 s 2SC2712
Q9 8-729-373-92 s 2SB739
Q10 8-729-216-22 s 2SA1162

Q11 8-729-177-33 s 2SD773-4
Q12 8-729-177-33 s 2SD773-4
Q13 8-729-800-68 s 2SB8157
Q14 8-729-373-92 s 2SB739
Q15 8-729-177-32 s 2SD773

Q17 8-729-216-22 s 2SA1162
Q18 8-729-216-22 s 2SA1162
Q19 8-729-100-67 s 2SC1623-L7
Q21 8-729-271-23 s 2SC2712
Q22 8-729-271-23 s 2SC2712

Q23 8-729-271-23 s 2SC2712
Q24 8-729-216-22 s 2SA1162
Q26 8-729-800-36 s 2SD1048
Q27 8-729-800-68 s 2SB8157
Q28 8-729-800-68 s 2SB8157

Q29 8-729-271-23 s 2SC2712
Q31 8-729-109-42 s 2SK94-X2
Q35 8-729-800-36 s 2SD1048

AR10 1-214-576-00 s METAL 6.2K 1% 1/8W
R11 1-214-561-00 s METAL 1.5K 1% 1/8W
R25 1-214-590-00 s METAL 24K 1% 1/8W
R26 1-214-569-00 s METAL 3.3K 1% 1/8W

Ref.No. Parts No. SP Description

RV1 1-228-457-11 s METAL 2K

RV2 1-228-456-00 s METAL 1K

RV3 1-228-457-11 s METAL 2K

RV4 1-228-475-11 s METAL 20K

RV5 1-228-472-11 s METAL 2K

RV6 1-228-827-00 s CERMET 50K

S1 1-553-510-11 s SLIDE

S2 1-570-857-11 s SLIDE

T1 1-448-363-21 s DC-DC CONVERTER

RG-20/20P BOARD

A-7513-584-A o MOUNTED CIRCUIT BOARD
"RG-20"

A-7513-594-A o MOUNTED CIRCUIT BOARD
"RG-20P"

C3 1-107-019-11 s MICA 1PF 0.5PF 500V
C4 1-107-042-11 s MICA 2.2PF 0.5PF 500V

IC1 8-759-200-79 s TC4049BF: TOSHIBA
IC2 8-741-135-60 s BX-1356: SONY
IC3 8-759-200-81 s TC4053BF: TOSHIBA

Q1 8-729-100-76 s 2SA812
Q2 8-729-100-76 s 2SA812
Q3 8-729-100-66 s 2SC1623

R3 1-216-651-11 s METAL CHIP 1K 0.5% 1/10W
R4 1-216-685-11 s METAL CHIP 27K 0.5% 1/10W
R5 1-216-665-11 s METAL CHIP 3.9K 0.5% 1/10W
R6 1-216-661-11 s METAL CHIP 2.7K 0.5% 1/10W
R7 1-216-661-11 s METAL CHIP 2.7K 0.5% 1/10W
R8 1-216-651-11 s METAL CHIP 1K 0.5% 1/10W
R16 1-216-624-11 s METAL CHIP 75K 0.5% 1/10W

RV1 1-228-455-11 s METAL 500

S1 1-570-609-11 s TOGGLE
S2 1-570-608-11 s TOGGLE
S3 1-570-988-11 s TOGGLE
S4 1-570-839-11 s SLIDE

Ref.No. Parts No. SP Description

SG-143/143P BOARD

A-7513-768-A o MOUNTED CIRCUIT BOARD
"SG-143"

A-7513-769-A o MOUNTED CIRCUIT BOARD
"SG-143P"

C8 1-162-724-11 s CERAMIC 390PF 5% 50V(J,UC)
1-162-879-11 s CERAMIC 100PF 5% 50V(EK)
C17 1-131-372-00 s TANTALUM 15MF 10% 10V
C32 1-162-872-11 s CERAMIC 51PF 5% 50V(J,UC)
1-162-674-11 s CERAMIC 39PF 5% 50V(EK)
C33 1-162-872-11 s CERAMIC 51PF 5% 50V(J,UC)
1-162-674-11 s CERAMIC 39PF 5% 50V(EK)
C36 1-131-365-00 s TANTALUM 10MF 10% 16V

C38 1-162-718-11 s CERAMIC 220PF 5% 50V(J,UC)
1-161-463-00 s CERAMIC 220PF 5% 50V(EK)
C43 1-107-210-11 s MICA 22PF 5% 500V(J,UC)
1-107-208-00 s MICA 18PF 5% 500V(EK)
C47 1-162-871-11 s CERAMIC 47PF 5% 50V
C49 1-102-951-21 s CERAMIC 15PF 5% 50V
C54 1-131-370-00 s TANTALUM 6.8MF 10% 10V

CN1 1-506-731-21 o RECEPTACLE, 40P MALE

D1 8-719-101-23 s 1SS123
D2 8-719-101-23 s 1SS123
D3 8-719-101-23 s 1SS123
D4 8-719-921-12 s HZ28LL
D5 8-719-100-03 s 1S2835
D6 8-719-100-05 s 1S2837
D7 8-719-815-55 s 1S1555
D8 8-719-100-03 s 1S2835
D9 8-719-100-03 s 1S2835
D10 8-719-948-47 s HSM88AS(EK)

IC1 8-757-930-11 s CX-7930A: SONY
IC2 8-759-907-21 s CX-7969: SONY
IC3 8-759-200-81 s TC4053BF: TOSHIBA
IC4 8-759-200-79 s TC4049BF: TOSHIBA
IC5 8-759-200-79 s TC4049BF: TOSHIBA
IC6 8-759-204-93 s TC50H001F: TOSHIBA
IC7 8-759-030-16 s TLO62ACPS: TI
IC8 8-741-151-60 s SBX1516-01: SONY
IC9 8-741-152-50 s SBX1525-01: SONY
IC10 8-759-206-55 s TC74HC453BF: TOSHIBA

IC11 8-741-133-80 s BX-1338: SONY
IC12 8-759-200-81 s TC4053BF: TOSHIBA
IC13 1-808-513-12 s IB-38: SONY
IC14 8-759-929-21 s TLC27L2CPS: TI
IC15 8-759-973-99 s CXD1361M: SONY(EK)

Ref.No.	Parts No.	SP Description
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L1	1-408-978-21	s 47μH
L2	1-408-978-21	s 47μH
L3	1-408-417-21	s 47μH
L4	1-408-417-21	s 47μH
L5	1-408-417-21	s 47μH

L6	1-408-170-11	s 18μH
L7	1-408-417-21	s 47μH
L8	1-408-150-11	s 22μH
L9	1-408-150-11	s 22μH
L10	1-408-417-21	s 47μH

L11	1-408-417-21	s 47μH
L12	1-408-417-21	s 47μH
L13	1-408-151-11	s 47μH

Q1	8-729-100-66	s 2SC1623(J,UC)
Q2	8-729-100-76	s 2SA812
Q3	8-729-100-76	s 2SA812
Q4	8-729-100-76	s 2SA812
Q5	8-729-100-76	s 2SA812

Q6	8-729-175-73	s 2SC2757
Q7	8-729-100-76	s 2SA812
Q8	8-729-100-66	s 2SC1623
Q9	8-729-100-76	s 2SA812

R33	1-215-473-11	s METAL 150K 1% 1/6W
R40	1-216-679-91	s METAL CHIP 15K 0.50% 1/10W
R44	1-216-680-11	s METAL CHIP 16K 0.5% 1/10W(P)
R67	1-216-663-91	s METAL CHIP 3.3K 0.50% 1/10W
R68	1-216-699-91	s METAL CHIP 100K 0.50% 1/10W
R69	1-216-691-91	s METAL CHIP 47K 0.50% 1/10W

RV1	1-228-460-11	s METAL 20K
RV2	1-228-475-11	s METAL 20K(J,UC)
RV3	1-228-474-11	s METAL 10K
RV4	1-228-475-11	s METAL 20K
RV5	1-228-460-11	s METAL 20K

S1	1-553-925-11	s ROTARY
S2	1-570-850-11	s SLIDE(J,UC)
S4	1-570-857-11	s SLIDE
S5	1-570-857-11	s SLIDE
S6	1-570-374-12	s SLIDE
S7	1-570-857-11	s SLIDE

X1	1-567-644-11	s 14.31818MHz(J,UC)
	1-567-654-11	s 17.734475MHz(EK)

Ref.No.	Parts No.	SP Description
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SW-114 BOARD

1-618-176-11	o PRINTED CIRCUIT BOARD	"SW-114"
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S1	1-553-739-21	s KEY BOARD "VTR START"
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R1	1-249-405-11	s CARBON 100 5% 1/4W
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SW-115A BOARD

1-618-175-13	o PRINTED CIRCUIT BOARD	"SW-115A"
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D1	8-719-910-98	s HZ9C2L
D2	8-719-815-55	s 1S1555
D3	8-719-815-55	s 1S1555
D4	8-719-815-55	s 1S1555

R1	1-249-423-11	s CARBON 3.3K 5% 1/4W
R2	1-249-429-11	s CARBON 10K 5% 1/4W
R3	1-249-429-11	s CARBON 10K 5% 1/4W

S1	1-554-356-11	s TOGGLE
S2	1-554-400-11	s TOGGLE
S3	1-554-400-11	s TOGGLE
S4	1-554-356-11	s TOGGLE

SW-116 BOARD

1-618-177-11	o PRINTED CIRCUIT BOARD	"SW-116"
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S1	1-554-395-11	s TOGGLE "A W/B BAL"
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SW-256 BOARD

1-623-749-12	o PRINTED CIRCUIT BOARD	"SW-256"
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S1	1-554-396-11	s TOGGLE "SHUTTER"
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Ref.No. Parts No. SP Description

VA-77 BOARD

A-7513-764-A o MOUNTED CIRCUIT BOARD
"VA-77"

C1 1-124-270-11 s ELECT 0.47MF 20% 50V
C17 1-102-965-21 s CERAMIC 39PF 5% 50V
C19 1-124-255-11 s ELECT 1MF 20% 50V
C38 1-101-884-21 s CERAMIC 56PF 5% 50V
C41 1-124-255-11 s ELECT 1MF 20% 50V

C62 1-101-880-21 s CERAMIC 47PF 5% 50V
C64 1-124-255-11 s ELECT 1MF 20% 50V
C70 1-130-471-11 s MYLAR 0.001MF 5% 50V
C80 1-130-483-11 s MYLAR 0.01MF 5% 50V
C81 1-124-255-11 s ELECT 1MF 20% 50V

C82 1-130-471-11 s MYLAR 0.001MF 5% 50V
C84 1-124-255-11 s ELECT 1MF 20% 50V
C89 1-124-284-11 s ELECT 10MF 20% 16V
C91 1-124-284-11 s ELECT 10MF 20% 16V
C93 1-124-284-11 s ELECT 10MF 20% 16V

C102 1-124-270-11 s ELECT 0.47MF 20% 50V
C103 1-124-270-11 s ELECT 0.47MF 20% 50V
C105 1-101-888-00 s CERAMIC 68PF 10% 50V
C106 1-102-959-00 s CERAMIC 22PF 10% 50V
C107 1-162-877-11 s CERAMIC 82PF 5% 50V

C130 1-163-097-00 s CERAMIC CHIP 15PF 5% 50V
C134 1-163-093-00 s CERAMIC CHIP 10PF 5% 50V

CN1 1-506-730-11 o RECEPTACLE, 40P MALE

CV1 1-141-301-11 s CERAMIC TRIMMER 35P
CV2 1-141-301-11 s CERAMIC TRIMMER 35P
CV3 1-141-301-11 s CERAMIC TRIMMER 35P

D1 8-719-448-48 s HSM88AS-TL
D3 8-719-800-76 s 1SS226
D4 8-719-448-48 s HSM88AS-TL
D5 8-719-800-76 s 1SS226
D6 8-719-101-23 s 1SS123

D7 8-719-448-48 s HSM88AS-TL
D8 8-719-800-76 s 1SS226
D10 8-719-101-23 s 1SS123
D14 8-719-101-97 s 1SS97-1
D15 8-719-448-48 s HSM88AS-TL

D16 8-719-448-48 s HSM88AS-TL
D30 8-719-100-03 s 1S2835

Ref.No. Parts No. SP Description

FL1 1-409-427-11 s TRAP 14.3MHz
FL2 1-409-427-11 s TRAP 14.3MHz
FL3 1-409-427-11 s TRAP 14.3MHz

IC1 8-759-945-72 s OP-07DPS: TI
IC2 1-807-415-11 s BH-1210: SONY
IC3 1-807-417-12 s BH-1212A: SONY
IC4 8-759-945-72 s OP-07DPS: TI
IC5 1-807-415-11 s BH-1210: SONY

IC6 1-807-417-12 s BH-1212A: SONY
IC7 8-759-945-72 s OP-07DPS: TI
IC8 1-807-415-11 s BH-1210: SONY
IC9 1-807-417-12 s BH-1212A: SONY
IC10 8-759-200-81 s TC4053BF: TOSHIBA

IC11 8-759-206-55 s TC74HC4538F: TOSHIBA
IC12 8-759-205-78 s TC504013BF: TOSHIBA
IC13 8-759-030-16 s TL062ACPS: TI
IC14 8-759-987-41 s SN74HC4066NS: TI
IC15 8-759-200-81 s TC4053BF: TOSHIBA

IC16 8-759-906-54 s TL064CNS: TI
IC17 8-759-906-54 s TL064CNS: TI
IC18 8-759-200-81 s TC4053BF: TI
IC19 8-759-906-54 s TL064CNS: TI
IC20 8-759-200-81 s TC4053BF: TOSHIBA

Q1 8-729-122-63 s 2SA1226
Q2 8-729-122-63 s 2SA1226
Q3 8-729-100-76 s 2SA812
Q4 8-729-175-73 s 2SC2757
Q5 8-729-109-42 s 2SK94-X2

Q6 8-729-109-42 s 2SK94-X2
Q8 8-729-109-42 s 2SK94-X2
Q9 8-729-109-42 s 2SK94-X2
Q10 8-729-109-42 s 2SK94-X2
Q11 8-729-175-73 s 2SC2757

Q12 8-729-122-63 s 2SA1226
Q13 8-729-122-63 s 2SA1226
Q14 8-729-100-76 s 2SA812
Q15 8-729-175-73 s 2SC2757
Q16 8-729-109-42 s 2SK94-X2

Q17 8-729-109-42 s 2SK94-X2
Q18 8-729-109-42 s 2SK94-X2
Q19 8-729-109-42 s 2SK94-X2
Q20 8-729-109-42 s 2SK94-X2
Q21 8-729-109-42 s 2SK94-X2

Ref.No. Parts No. SP Description

Q22 8-729-175-73 s 2SC2757
Q23 8-729-122-63 s 2SA1226
Q24 8-729-122-63 s 2SA1226
Q25 8-729-100-76 s 2SA812
Q26 8-729-175-73 s 2SC2757

Q27 8-729-109-42 s 2SK94-X2
Q28 8-729-109-42 s 2SK94-X2
Q29 8-729-109-42 s 2SK94-X2
Q30 8-729-109-42 s 2SK94-X2
Q31 8-729-109-42 s 2SK94-X2

Q32 8-729-175-73 s 2SC2757
Q33 8-729-100-76 s 2SA812
Q34 8-729-100-76 s 2SA812
Q35 8-729-100-76 s 2SA812
Q36 8-729-100-76 s 2SA812

Q37 8-729-100-76 s 2SA812
Q40 8-729-100-76 s 2SA812
Q41 8-729-109-42 s 2SK94-X2
Q42 8-729-100-66 s 2SC1623
Q43 8-729-109-42 s 2SK94-X2
Q44 8-729-100-66 s 2SC1623

R1 1-216-649-91 s METAL CHIP 820 0.50% 1/10W
R3 1-216-689-91 s METAL CHIP 39K 0.50% 1/10W
R5 1-216-635-91 s METAL CHIP 220 0.50% 1/10W
R10 1-216-635-11 s METAL 220 0.5% 1/10W
R11 1-216-699-91 s METAL CHIP 100K 0.50% 1/10W

R15 1-216-665-91 s METAL CHIP 3.9K 0.50% 1/10W
R35 1-216-699-91 s METAL CHIP 100K 0.50% 1/10W
R39 1-216-649-91 s METAL CHIP 820 0.50% 1/10W
R40 1-216-689-91 s METAL CHIP 39K 0.50% 1/10W
R44 1-216-699-91 s METAL CHIP 100K 0.50% 1/10W

R49 1-216-631-91 s METAL CHIP 150 0.50% 1/10W
R50 1-216-635-91 s METAL CHIP 220 0.50% 1/10W
R51 1-216-665-91 s METAL CHIP 3.9K 0.50% 1/10W
R52 1-216-658-91 s METAL CHIP 2K 0.50% 1/10W
R54 1-216-671-91 s METAL CHIP 6.8K 0.50% 1/10W

R77 1-216-603-91 s METAL CHIP 10 0.50% 1/10W
R78 1-216-649-91 s METAL CHIP 820 0.50% 1/10W
R79 1-216-603-91 s METAL CHIP 10 0.50% 1/10W
R81 1-216-635-91 s METAL CHIP 220 0.50% 1/10W
R83 1-216-689-91 s METAL CHIP 39K 0.50% 1/10W

R88 1-216-631-91 s METAL CHIP 150 0.50% 1/10W
R93 1-216-671-91 s METAL CHIP 6.8K 0.50% 1/10W
R122 1-216-655-91 s METAL CHIP 1.5K 0.50% 1/10W
R154 1-215-482-00 s METAL 360K 1% 1/6W
R200 1-247-885-51 s CARBON 180K 5% 1/4W

Ref.No. Parts No. SP Description

R217 1-216-699-91 s METAL CHIP 100K 0.50% 1/10W
R235 1-215-471-00 s METAL 120K 1% 1/6W
R236 1-215-477-00 s METAL 220K 1% 1/6W
R237 1-215-471-00 s METAL 120K 1% 1/6W
R240 1-216-689-11 s METAL CHIP 39K 0.50% 1/10W

R243 1-216-654-91 s METAL CHIP 1.3K 0.50% 1/10W
R251 1-215-487-51 s METAL 560K 1% 1/6W
R272 1-216-679-11 s METAL CHIP 15K 0.50% 1/10W
R277 1-216-679-11 s METAL CHIP 15K 0.50% 1/10W

RV1 1-228-473-00 s CERMET 5K
RV2 1-228-472-11 s METAL 2K
RV3 1-228-460-11 s METAL 20K
RV4 1-228-459-11 s METAL 10K
RV5 1-228-474-11 s METAL 10K

RV6 1-228-472-11 s METAL 2K
RV7 1-228-460-11 s METAL 20K
RV8 1-228-459-11 s METAL 10K
RV9 1-228-474-11 s METAL 10K
RV10 1-228-472-11 s METAL 2K

RV11 1-228-460-11 s METAL 20K
RV12 1-228-459-11 s METAL 10K
RV13 1-228-475-11 s METAL 20K
RV14 1-228-475-11 s METAL 20K
RV15 1-228-475-11 s METAL 20K

RV16 1-228-462-11 s METAL 100K
RV17 1-228-462-11 s METAL 100K
RV18 1-228-462-11 s METAL 100K
RV19 1-228-462-11 s METAL 100K
RV20 1-228-462-11 s METAL 100K

RV21 1-228-462-11 s METAL 100K
RV22 1-228-462-11 s METAL 100K
RV23 1-228-462-11 s METAL 100K
RV24 1-228-462-11 s METAL 100K
RV25 1-228-462-11 s METAL 100K

RV26 1-228-462-11 s METAL 100K
RV27 1-228-462-11 s METAL 100K
RV28 1-228-457-11 s METAL 2K
RV29 1-228-457-11 s METAL 2K
RV30 1-228-457-11 s METAL 2K

RV31 1-228-462-11 s METAL 100K
RV32 1-228-462-11 s METAL 100K
RV33 1-228-462-11 s METAL 100K
RV34 1-228-462-11 s METAL 100K
RV35 1-228-462-11 s METAL 100K

Ref.No.	Parts No.	SP	Description
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RV36	1-228-462-11	s	METAL 100K
RV38	1-228-462-11	s	METAL 100K
RV39	1-228-462-11	s	METAL 100K
RV40	1-228-462-11	s	METAL 100K
RV43	1-228-460-11	s	METAL 20K

RV45	1-228-460-11	s	METAL 20K
RV46	1-228-460-11	s	METAL 20K
RV48	1-228-465-11	s	METAL 1M
RV49	1-237-034-41	s	METAL 2K
RV51	1-237-034-41	s	METAL 2K

S1	1-570-857-11	s	SLIDE
S2	1-570-610-11	s	TOGGLE

CAMERA FRAME

1-223-165-00	s	RES, ADJ, WIREWOUND 10K
1-547-259-11	o	FILTER UNIT
1-937-212-21	o	VF HARNESS
1-937-218-11	o	LENS HARNESS

CN101	1-565-051-11	o	RECEPTACLE, 20P FEMALE
CN102	1-562-221-21	s	RECEPTACLE, 12P FEMALE
CN103	1-561-781-21	s	RECEPTACLE, BNC
CN104	1-565-050-11	o	RECEPTACLE, 50P MALE
CN105	1-561-233-21	o	RECEPTACLE, 6P FEMALE

RV1	1-223-165-00	s	WIREWOUND 10K
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Ref.No.	Parts No.	SP	Description
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VIEWFINDER

CN-274 BOARD

1-626-735-12	o	PRINTED CIRCUIT BOARD "CN-274"
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CN11	1-566-399-21	o	RECEPTACLE, 18P MALE
	1-563-877-11	o	PLUG HOUSING, 18P
	1-563-869-11	o	PLUG CONTACT
CN13	1-566-395-21	o	RECEPTACLE, 10P MALE
	1-563-873-11	o	PLUG HOUSING, 10P
	1-563-869-11	o	PLUG CONTACT
CN14	1-566-394-21	o	RECEPTACLE, 8P MALE

LP-45 BOARD

1-626-737-11	o	PRINTED CIRCUIT BOARD "LP-45"
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CN31	1-563-871-11	o	HOUSING, CONNECTOR 6P
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D1	8-719-812-43	s	TLG124A
D2	8-719-812-43	s	TLG124A
D3	8-719-812-43	s	TLG124A
D4	8-719-812-43	s	TLG124A
D5	8-719-812-41	s	TLR124
D6	8-719-812-44	s	TLQ124
D7	8-719-812-43	s	TLG124A
D8	8-719-915-45	s	GL-9PR20
D9	8-719-915-45	s	GL-9PR20
D10	8-719-909-20	s	GL-9NG2
D11	8-719-909-20	s	GL-9NG2

SW-300 BOARD

1-626-738-11	o	PRINTED CIRCUIT BOARD "SW-300"
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CN1	1-566-393-21	o	RECEPTACLE, 6P MALE
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S1	1-570-984-11	s	TOGGLE
S2	1-570-984-11	s	TOGGLE
S3	1-570-985-11	s	TOGGLE

Ref.No. Parts No. SP Description

VF-39 BOARD

A-7513-773-A o MOUNTED CIRCUIT BOARD
"VF-39"

Ref.No. Parts No. SP Description

DL1 1-415-487-11 s 140nS+6nS

IC1 8-759-300-28 s HA11423MP: HITACHI

C1 1-135-093-95 s TANTAL. CHIP 10MF 10% 16V
C2 1-135-125-95 s TANTAL. CHIP 33MF 20% 10V
C4 1-135-096-95 s TANTAL. CHIP 4.7M 10% 10V

IC2 8-759-100-94 s μ PC358G2: NEC
IC3 8-759-209-58 s TC4S69F: TOSHIBA
IC4 8-759-209-55 s TC4S01F-TE85L: TOSHIBA

AC15 1-136-534-11 s FILM 0.0027MF 5% 100V

AC16 1-136-287-11 s FILM 0.0047MF 5% 100V

L2 1-459-899-11 s LINEARITY
L3 1-410-716-61 s 82 μ H

C21 1-164-350-11 s CERAMIC 470PF 10% 1KV
C22 1-124-908-11 s ELECT 22MF 20% 50V
C23 1-163-833-91 s CERAMIC CHIP 0.068MF 25V
C25 1-135-093-95 s TANTAL. CHIP 10MF 10% 16V
C26 1-135-076-95 s TANTAL. CHIP 1MF 10% 35V
C27 1-135-093-95 s TANTAL. CHIP 10MF 10% 16V
C30 1-135-093-95 s TANTAL. CHIP 10MF 10% 16V
C31 1-135-072-95 s TANTAL. CHIP 0.22MF 10% 35V
C33 1-135-093-95 s TANTAL. CHIP 10MF 10% 16V
C34 1-135-093-95 s TANTAL. CHIP 10MF 10% 16V
C35 1-136-287-11 s FILM 0.0047MF 5% 100V
C37 1-163-037-91 s CERAMIC CHIP 0.022MF 10% 25V
C38 1-135-076-95 s TANTAL. CHIP 1MF 10% 35V
C39 1-135-076-95 s TANTAL. CHIP 1MF 10% 35V
C41 1-135-093-95 s TANTAL. CHIP 10MF 10% 16V
C42 1-135-092-95 s TANTAL. CHIP 3.3MF 10% 16V
C45 1-135-093-95 s TANTAL. CHIP 10MF 10% 16V
C46 1-126-176-11 s ELECT 220MF 20% 10V
C47 1-126-101-11 s ELECT 100MF 20% 16V

Q1 8-729-175-72 s 2SC2757-T33
Q2 8-729-175-72 s 2SC2757-T33
Q3 8-729-175-72 s 2SC2757-T33
Q4 8-729-175-72 s 2SC2757-T33
Q5 8-729-100-66 s 2SC1623
Q6 8-729-112-92 s 2SC3360
Q7 8-729-100-66 s 2SC1623
Q8 8-729-119-00 s 2SK612
Q9 8-729-119-00 s 2SK612
Q10 8-729-112-92 s 2SC3360
Q11 8-729-100-66 s 2SC1623
Q12 8-729-100-76 s 2SA812
Q13 8-729-175-72 s 2SC2757-T33
Q14 8-729-100-66 s 2SC1623
Q15 8-729-100-76 s 2SA812
Q16 8-729-102-43 s 2SB624-BV3
Q17 8-729-109-43 s 2SK94-X3

CN1 1-566-395-11 o RECEPTACLE, 10P MALE
1-563-873-11 o PLUG HOUSING, 10P
1-563-869-11 o PLUG CONTACT
CN2 1-566-396-11 o RECEPTACLE, 12P MALE
1-563-874-11 o PLUG HOUSING, 12P
1-563-869-11 o PLUG CONTACT

R3 1-216-687-91 s METAL CHIP 33K 0.50% 1/10W
R4 1-216-683-91 s METAL CHIP 22K 0.50% 1/10W
R5 1-216-641-91 s METAL CHIP 390 0.50% 1/10W
R6 1-216-644-91 s METAL CHIP 510 0.50% 1/10W
R8 1-216-644-91 s METAL CHIP 510 0.50% 1/10W
R10 1-216-657-91 s METAL CHIP 1.8K 0.50% 1/10W
R11 1-216-689-91 s METAL CHIP 39K 0.50% 1/10W
R12 1-216-683-91 s METAL CHIP 22K 0.50% 1/10W
R14 1-216-637-91 s METAL CHIP 270 0.50% 1/10W
R15 1-216-671-91 s METAL CHIP 6.8K 0.50% 1/10W

CV1 1-141-359-21 s CAP, VAR, TRIMMER (CHIP)

R16 1-216-639-11 s METAL CHIP 330 0.50% 1/10W
R17 1-216-644-91 s METAL CHIP 510 0.50% 1/10W
R19 1-216-667-91 s METAL CHIP 4.7k 0.50% 1/10W
R20 1-216-645-91 s METAL CHIP 560 0.50% 1/10W
R22 1-216-657-91 s METAL CHIP 1.8K 0.50% 1/10W
R23 1-216-673-91 s METAL CHIP 8.2K 0.50% 1/10W

D1 8-719-914-11 s HZ4ALL
D2 8-719-101-23 s 1SS123
D3 8-719-900-95 s V09G
D5 8-719-901-19 s V11N
D6 8-719-900-95 s V09G

AR25 1-216-683-11 s METAL CHIP 22K 0.50% 1/10W

D7 8-719-100-05 s 1S2837
D8 8-719-100-05 s 1S2837
D9 8-719-101-23 s 1SS123
D10 8-719-101-23 s 1SS123
D11 8-719-100-05 s 1S2837

R26 1-216-667-11 s METAL CHIP 4.7K 0.50% 1/10W
R27 1-216-667-11 s METAL CHIP 4.7K 0.50% 1/10W
R28 1-216-667-91 s METAL CHIP 4.7K 0.50% 1/10W

D12 8-719-910-75 s HZ7B2L
D13 8-719-104-34 s 1S2836

Ref.No. Parts No. SP Description

R32 1-216-698-91 s METAL CHIP 91K 0.50% 1/10W
 R46 1-215-490-51 s METAL 750K 1% 1/6W
 R50 1-216-085-00 s RES, CHIP 33K 5% 1/10W
 R51 1-216-057-00 s RES, CHIP 2.2K 5% 1/10W
 R79 1-216-681-11 s METAL CHIP 18K 0.50% 1/10W

R81 1-216-683-11 s METAL CHIP 22K 0.50% 1/10W
 R82 1-216-683-11 s METAL CHIP 22K 0.50% 1/10W

R85 1-216-668-91 s METAL CHIP 5.1K 0.50% 1/10W
 R86 1-216-693-91 s METAL CHIP 56K 0.50% 1/10W
 R87 1-216-659-91 s METAL CHIP 2.2K 0.50% 1/10W

R88 1-216-114-00 s RES, CHIP 510 5% 1/10W
 R91 1-216-627-11 s METAL CHIP 100 0.5% 1/10W
 R92 1-216-627-11 s METAL CHIP 100 0.5% 1/10W
 R93 1-216-637-11 s METAL CHIP 270 0.5% 1/10W
 R97 1-208-259-00 s MICRO(HIGH MEGA OHM) 10M

R99 1-216-085-00 s RES, CHIP 33K 5% 1/10W

RV1 1-237-035-11 s METAL 5K

RV2 1-237-035-11 s METAL 5K

T1 1-439-419-11 s FLYBACK

Ref.No. Parts No. SP Description

Q1 8-729-901-03 s DTC144WK
 Q2 8-729-901-03 s DTC144WK
 Q3 8-729-901-03 s DTC144WK
 Q4 8-729-901-03 s DTC144WK

R15 1-216-691-91 s METAL CHIP 47K 0.50% 1/10W

RV1 1-238-296-11 s CARBON 10K
 RV2 1-238-296-11 s CARBON 10K
 RV3 1-238-290-11 s CARBON 1K
 RV4 1-238-293-11 s CARBON 10K
 RV5 1-228-473-11 s METAL 5K

VIEWFINDER FRAME

1-542-106-11 s MICROPHONE

1-546-066-12 s 1.5" CRT ASSY

1-940-868-12 s VF CABLE HARNESS

VR-78 BOARD

A-7513-772-A o MOUNTED CIRCUIT BOARD
 "VR-78"

C8 1-163-037-91 s CERAMIC CHIP 0.022MF 10% 25V
 C9 1-124-584-00 s ELECT 100MF 20% 10V

CN22 1-566-395-21 o PIN, CONNECTOR 10P
 1-563-872-11 o PLUG HOUSING 8P
 1-563-869-11 o PLUG CONTACT

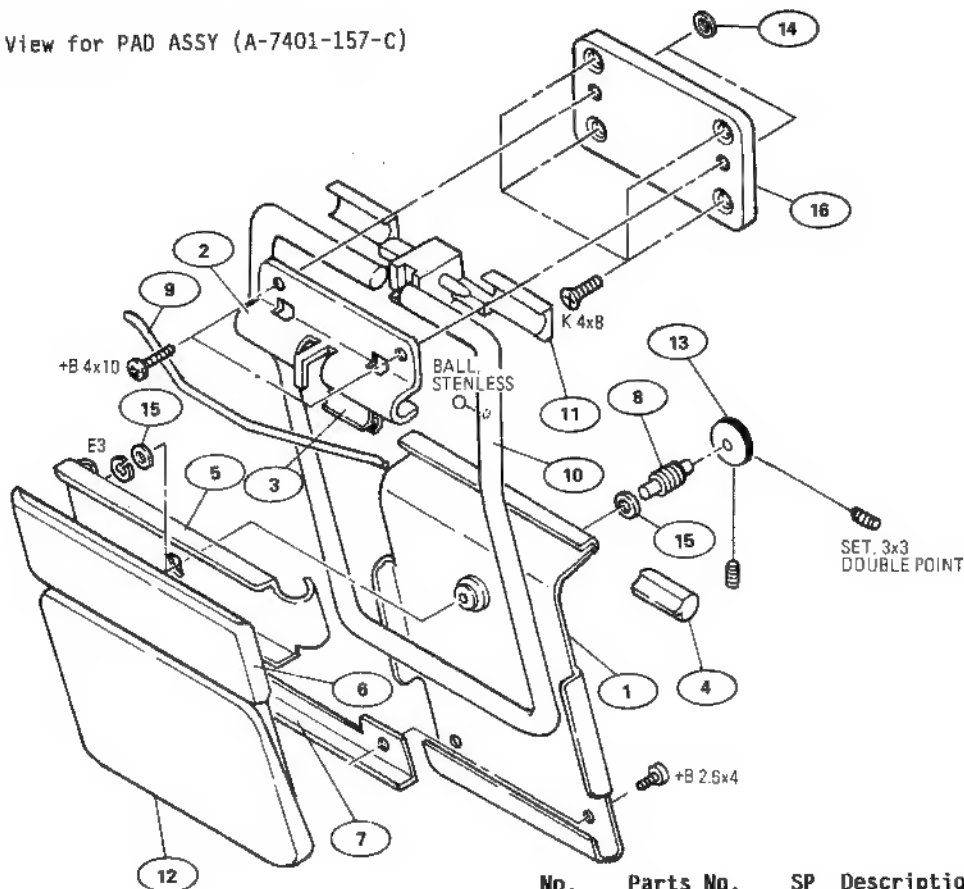
D1 8-719-950-44 s GL5LR40
 D2 8-719-950-44 s GL5LR40

IC1 8-759-801-06 s LB1423N

SUPPLIED ACCESSORIES

Parts No.	SP	Description
A-7401-157-C	S	PAD ASSY (2)
A-7520-253-A	O	EXTENSION BOARD "EX-108"
X-3710-001-3	O	LID ASSY, UPPER
3-673-018-00	O	SCREW, BLIND
3-675-930-00	S	CAP (50-PIN SIDE), DUST
3-692-589-01	S	TOOL
3-711-780-02	S	COVER, RAIN
3-720-955-01	S	LID, VF MICROPHONE
7-700-736-04	S	WRENCH, L-SHAPED HEX. (2.5mm)
7-721-140-60	S	WRENCH, L (3.0mm)

* Exploded View for PAD ASSY (A-7401-157-C)



No.	Parts No.	SP	Description
1	X-3678-615-2	O	SUPPORT ASSY, PAD
2	3-680-507-00	O	BRACKET (A), STAY
3	3-680-508-00	O	PAD (A), STOPPER
4	3-680-509-00	O	PAD (B), STOPPER
5	3-680-510-00	O	BRACKET, STAY
6	3-680-511-03	O	PAD (B)
7	3-680-512-00	O	CLAMP, STAY
8	3-680-515-00	O	SCREW, STAY ADJUST
9	3-680-517-00	O	SPRING
10	3-680-518-00	O	STAY, PAD
11	3-680-519-00	O	SUPPORT, STAY
12	3-680-520-03	O	PAD (A)
13	3-680-533-00	O	KNOB, ADJUSTMENT
14	3-687-116-01	O	WASHER (4), STOPPER
15	3-701-441-21	S	WASHER (4), POLY
16	3-720-999-01	S	SPACER (2), SHOULDER